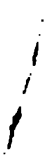

UNIVERSITY OF CALIFORNIA PUBLICATIONS
AMERICAN ARCHAEOLOGY AND ETHNOLOGY
Vol. 1 No. 1

LIFE AND CULTURE OF THE HUPA

BY

PLINY EARLE GODDARD

BERKELEY
THE UNIVERSITY PRESS
September, 1903
PRICE $1.25

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LIFE AND CULTURE OF THE HUPA.

INTRODUCTION.

The information contained in this paper was obtained mostly during a residence on the Hoopa Valley Reservation from March, 1897, to August, 1900. Additional facts, gleaned during several visits to that region since that time, have been added. The expense of one of these trips was borne by the California Academy of Sciences. The others have been under the auspices of the Department of Anthropology of the University of California, by the generosity of Mrs. Phoebe A. Hearst.

It has been the sole object to record things seen by the author and information obtained at first hand from the Indians. There has been no attempt to get at the causes and origin of the practices and customs of the Hupa. In some cases their own explanations, which are not necessarily the correct ones, are given.

Stephen Powers' account of the Hupa, as found in the Overland Monthly, Series I, Volume ix, and in the Contributions to North American Ethnology, Volume iii, contains some facts, but on the whole is misleading. Professor Otis T. Mason's article on the Ray collection, in the Report of the Smithsonian Institution for 1886, Part i, pp. 205–239, based upon the information furnished by Lieutenant Ray, is fairly accurate, although the errors of Powers and others have been retained and a few new ones have been added. This inevitably happens when one writes without having visited a tribe concerning which so little is known. Professor Mason's descriptions of the specimens in the Ray Collection are not to be improved upon.

Hupa Texts to which frequent reference is made is now in press and will form the second number of this volume.

Thanks are due to Dr. Philip Mills Jones and to Mr. C. C. Willoughby for assistance with the illustrations and to Dr. Willis L. Jepson and Mr. Joseph Burtt Davy for the determination of botanical specimens relating to Hupa life.

ENVIRONMENT.

Geographical Features.

The Hupa Indians occupy a beautiful valley on the lower part of the Trinity river in Humboldt county, California (see map). The Trinity, at this portion of its course, flows in a north-westerly direction. The valley is about six miles long and from a mile to two miles wide. On the west, the mountain ridge, which separates the Trinity from Redwood creek, is about 4000 feet high. The westerly slope of this ridge is mostly open, while the Trinity side is heavily wooded. The eastern side of the valley culminates in a horse-shoe-shaped mountain 6500 feet high, on which each winter snow falls from ten to twenty feet in depth. Three good sized creeks fed by this snow find their way to the Trinity as it passes through the valley. There are also three creeks of nearly equal volume which come from the hills on the west. The eastern valley wall, where not cut away by the creeks, stands in triangles, as steep as the soil can cling to the mountain side, to the height of about 1500 feet. From the apices of these triangles ridges run back with a gentle ascent to Trinity Summit, the horse-shoe-shaped mountain already mentioned. The northern sides of these ridges are generally well timbered, while the southern sides are covered with chaparral or grass.

At the northern end of the valley, rising gradually to the height of 1900 feet is a grass-covered slope crowned with woods. At the first glance, one would think the Trinity found its way to the Klamath through the gap on the west side of this hill; but in reality it makes a sharp turn to the east and passes six miles through a wild steep canon. The southern end of the valley is blocked by a hill of nearly equal height. The Trinity has carved out of the side of this hill a beautiful valley of about fifty acres, which is named from its shape the Sugar Bowl.

Flora.

The *Coniferæ* of the surrounding forests are: the sugar pine, *Pinus Lambertiana*, on the tops of the western ridges and at a similar elevation on the eastern side; the digger pine, *Pinus*

Sabiniana, in and near the valley; a few scattered yellow pine, *Pinus ponderosa*; cedar, *Libocedrus decurrens*, along some of the creeks; a few redwood, *Sequoia sempervirens*, in one spot on the western side of the valley; and Douglas spruce, *Pseudotsuga taxifolia*, everywhere. The yew, *Taxus brevifolia*, which adds so much to the success of all those who carry on the struggle for existence with the bow, is found on both sides of the valley at an elevation of 3000 to 4000 feet.

Among the oaks the maul oak, *Quercus chrysolepis*, the tanbark oak, *Q. densiflora*, the Pacific post oak, *Q. Garryana*, and the black oak, *Q. Californica*, are frequently met with, the madroña, *Arbutus Menziesii*, is common. Along the streams are alders, *Alnus Oregana*, willows, *Salix*, and occasionally a cottonwood, *Populus trichocarpa*.

Of shrubs the hazel, *Corylus rostrata* var. *Californica*, is to the Indian the most important. The chaparral which covers the less fertile parts of the valley and much of the surrounding hills consists largely of manzanita, *Arctostaphylos*, deer brush, *Ceanothus*, and poison oak, *Rhus diversiloba*.

Besides these larger and more prominent members of the vegetable kingdom, one finds a great variety of plants large and small, very many of which minister to the wants of the Indian.

FAUNA.

The elk formerly fed in great bands on the mountain meadows. They have disappeared since the coming of white men. The deer are still plentiful in the surrounding hills. The grizzlies, the hereditary enemies of the Indian, were formerly numerous, but have been exterminated by the introduction of firearms. The small bears, black and brown, still possess the mountains east of the valley. They seldom interfere with the interests of man and so there is little motive for killing them. The great cat, *Felis concolor*, with his several aliases, mountain lion, panther, and cougar, still finds a home in the dark cañons. He seldom shows himself except when driven to boldness by hunger. The bob cat is occasionally seen. The larger wolf lives only in the memory of the older Indians. Coyote, sometimes the hero and sometimes the clown of the myths, and the cunning thief of real

life, after years of absence is again making his voice heard. Along the stream may be caught the otter, the fisher, and the mink.

The ruffed grouse, the pheasant, and the larger quail find a home in the mountains. Wild ducks are visitors in winter. Smaller birds are various and plentiful.

Before mining was begun on the upper courses of the Trinity, its waters were as clear as the small mountain streams are yet. In those days the river was literally alive with salmon during the running time. Sturgeons were frequently caught. Lamprey eels swarm up the river in spring. The creeks abound in trout.

The Hupa had one domestic animal, the dog, of which Mr. Gibbs* has preserved a description:—

"Notwithstanding their poverty, they had the usual complement of wolfish looking dogs, which came out of the lodges to look at us and went silently back. These fellows do not make much noise at any time beyond a complaining yelp when kicked, unless they are engaged in one of their customary battles. Their voice, when they do bark, resembles that of coyote. Their color is usually black and white, or brown and white. They have bushy tails and sharp noses, and in fighting snap viciously, much after the manner of the wolf. The Indians, we were told, used them in hunting to drive deer to their snares, but we saw no instances of their being employed in this or any other way. One peculiarity which they exhibit is inquisitiveness. They follow and watch strangers with no other apparent motive than curiosity. They usually wear an expression of misanthropy and disgust at the world, which as they are always half-starved, is by no means singular. Unfortunately salmon blood does not kill them, as it does dogs of a more generous breed."

This description of the dogs seen by Mr. Gibbs on the Klamath river in 1851 agrees with the account given of them by the old people on the Trinity. They say the ears of these dogs were always erect. Frequent mention is made of the dog in the myths, where he is mentioned as the companion and helper of man in the hunt, and the implacable foe of the coyote. They think it

* Schoolcraft, Vol. iii, pp. 152–3.

hazardous to talk much to dogs for fear they might reply. This would cause the death of those who hear. Pains are taken to keep dogs from the vicinity of a dance or religious feast.

NEIGHBORS.

The human inhabitants are of the great Athapascan stock as is shown by their language. The Hupa have no migration myth nor legends relating to a time before their coming to the region. According to their own belief their first ancestors came spontaneously into existence in the valley itself. They have Athapascan neighbors on the south and west. Those to the south live along the Trinity river from Hupa valley to the mouth of the Southfork twenty miles above. They have been treated by Stephen Powers under the name of Kĕlta as a separate tribe. Strictly speaking there are no tribes on the coast of California. The divisions are natural and of varying degrees, rather than political and well marked. The language spoken at Southfork differs but slightly from that used in Hupa valley. The village of Ɬeldiñ at Southfork figures prominently in the Hupa myths and it is said that the authority of the last head-man in Hupa extended to, and perhaps above, Southfork. The only important difference is in religious matters.

On the west are the Redwood Indians, the Whilkût of Powers. They lived along the middle portion of Redwood creek and the Bald Hills between that stream and the Klamath river. They were cut off from the Hupa during several months of the year by the snow on the ridge between their respective territories. Their speech is a fairly well marked dialect as compared with the Hupa tongue as regards both pronunciation and vocabulary. Powers* was certainly unwarranted in concluding that the Hupa had compelled them to discard their own language and adopt that of the Hupa, since their language is closer to the other Athapascan dialects than is the Hupa itself. It is not known that the Redwood Indians had any political relations with the Hupa. There is a marked difference in religion.

On the north of the Hupa are the Yurok, occupying the shores of the Klamath river from the mouth of Bluff creek (eight miles

*Contributions to North American Ethnology, Vol. iii, p. 87.

above the mouth of the Trinity) to the ocean. They also held the coast south to Little river, a few miles north of Humboldt bay.

On the northeast are the Karok occupying the Klamath from Bluff creek to Happy Camp. The whole basin of the Salmon river to the east of the Hupa is now occupied by people of the Shasta stock. High mountain ridges separate them from the Hupa upon whom they seem to have exercised but little influence. New river, a tributary of the Trinity southeast from Hupa, was occupied by a people now extinct, with the exception of one old woman. The main Trinity from the mouth of Southfork to Junction City was the home of the Chimariko who are now represented by nine adults. The people just mentioned as occupying New river, the Chimalakwe of Powers, have been thought to be identical with or closely related to the Chimariko. From the testimony of survivors it is probable that they were distinct. This conclusion is borne out by the scanty linguistic remains which point to an affinity with Shasta.

The Hupa and the two tribes on the Klamath held frequent intercourse, traded with each other, attended one another's dances, and sometimes intermarried. Trade was carried on especially with the Yurok, who held not only the lower Klamath but the mouth of Redwood creek and the coast south beyond Trinidad. From them the Hupa bought canoes, "smelt" and other salt-water fish, mussels, and seaweed. In return they gave acorns and other inland food. The Yurok were always greeted with terms of relationship and counted as friends. The Hupa probably came into direct relations also with the Athapascan villages along the coast northward from the mouth of the Klamath. Very little intercourse seems to have been held with the Athapascans on Mad river, or with the Indians about Humboldt bay.

HISTORY.

So secluded were these people in their valley home that sixty years ago the news of the coming of white men had not reached them; they knew nothing of the Spaniards to the south nor of the English speaking people to the east and north of them. During the year 1828 Jedediah Smith and a company of Hudson

Bay trappers crossed from the Sacramento valley and descended the Trinity to the Klamath and the Klamath to the Pacific. The last part of the journey including that through the valley is said to have been made by water.* The trip seems to have made very little, if any, impression on the Hupa. Within the memory of men still living, probably between 1840 and 1850, two companies of white men passed through the valley.†

After the discovery of gold on the upper Trinity in 1850, a horde suddenly burst on the valley. There were a few bars of good pay-gravel along the river in the valley itself, and miners, white and Chinese, rushed in. Then when the richest bars had been worked, a few white men took up farms and planted orchards. On account of the disturbed conditions in the surrounding country a military post was established in the valley in 1855. In August, 1864, Superintendent Wiley selected the valley and surrounding hills for an Indian reservation. Congress appropriated $60,000 on March 3, 1865, to pay the settlers for their improvements.

The first agent placed in charge was Robert Stockton. He gave the population in 1866 as 650, with a birth and death rate of 12 for the year. At that time no Indians from the surrounding country had been brought into the valley. Some of the Hupa may have been absent, but the count was probably nearly correct.

The medical officer in making a report in 1866 of the sanitary condition of the people remarked that already, almost without exception, they were affected with loathsome diseases from associating with white men.

They are mentioned in the official reports as being willing to work and exceedingly quick to learn the details of farming and stock raising. Especial mention is made of their ability to understand and use complicated machinery.

In April of the next year (1867) Agent Stockton with three of his white employees attempted to arrest an Indian who had been guilty of several robberies in the surrounding country. They located him in a cabin some miles south of the valley and

* Geo. Gibbs, Schoolcraft, Vol. iii, p. 136.

† Hupa Texts xiii and xiv.

demanded his surrender. He warned them not to enter his house, but they disregarded the warning and were all killed by the one Indian.

About this time trouble arose between TakimiLdiñ (Hostler) and Tsewenaldiñ (Senalton) villages over the killing of a young man by the soldiers. A woman belonging to Tsewenaldiñ had stabbed a soldier while defending her honor. Some time after, the soldiers killed the TakimiLdiñ young man mentioned. The men of TakimiLdiñ were unable to reach the real murderers and turned for revenge on the relatives of the Tsewenaldiñ woman who had, according to their way of thinking, started the whole trouble by killing a white man. A war after the Indian sort followed, in which about twenty, most of whom were Tsewenaldiñ, were killed.

The Indians who had been collected on Smith River Reservation, in what is now Del Norte county, were brought to the valley in 1868. The census of the Reservation for 1870 states that there were on the Reservation 106 Redwood Indians, 73 Siaws, and 54 Humboldt Indians. The Agent who assumed the charge of the Reservation during the same year could find only 649 Indians instead of the total of 847 reported by his predecessor. He remarks: "It may not be amiss to observe that a majority of the Reservation Indians have lived all their lives where they do now; the Redwoods, Siaws, and Mad Rivers being exceptional." Later these people who were brought in from outside left the Reservation, with the exception of three or four Redwood men who had married with the Hupa.

H. L. Knight, an attorney at law, of Eureka, who spent some months on the Reservation in 1871, has this to say concerning the treatment they had received and were receiving from the men in charge:

"If the Reservation was a plantation, the Indians were the most degraded slaves. I found them poor, miserable, vicious, degraded, dirty, naked, diseased and ill-fed. The oldest men, or stout middle-aged fathers of families, were spoken to just as children or slaves. They know no law but the will of the Agent; no effort has been made to teach them any, and where it does not conflict with this dictation, they follow the old forms of

life—polygamy, buying and selling of women, and compounding crime with money, *ad libitum*."*

From 1873 until May 9, 1877, the Reservation was under the control of men with missionary proclivities. The school, Sunday school, and church flourished for a time. Some real impressions, yet observable, were made upon the Indians at that time. The last of these Agents, through lack of wisdom and, possibly on account of some more blamable defects, was obliged to report the complete failure of the Reservation. The attempt to maintain it was abandoned, and the stock was driven to Round Valley in Mendocino county, with the expectation of removing the Indians there also. All the movable property was sold at auction or taken away.

With a change at Washington, it was decided to continue the Reservation. Army officers were placed in charge, but recovery was slow. In time, energetic men succeeded in putting the industrial affairs on their feet.

In 1892 the soldiers were removed and the military post abandoned. One company of soldiers, and sometimes two, had been kept here 25 years after all need of their presence had passed. This was done in the face of oft-repeated protests of the Agents in charge, civilian and military alike. Nothing could have been worse for these Indians than the maintenance of these men in comparative idleness in their midst. It may be said in all truth that if the government in 1864 had resolved to do all that lay in its power to demoralize this people, it could hardly have taken a course more sure to reach that end than the one followed.

A boarding school was established in 1893. Allotments of the land have been made and the Hupa are now self-supporting and capable of becoming useful citizens. They are good farmers and stock raisers; several are able to do smith and carpenter work. A few adults have education enough to read understandingly. They are fairly honest, a few perfectly so, and nearly as temperate as white men under similar temptation. Very little violence occurs in spite of the fact that no punishments have been administered until recently. The tribe now numbers about 450 with a nearly equal birth and death rate.

* Report of the Indian Commissioner, 1871, p. 158.

VILLAGES.

The homes of the Hupa were grouped in villages, locally called ranches but more properly rancherias (see map). The villages were almost without exception on the bank of the river near some spring of water. Beginning at the south, about three miles beyond the valley proper, on the right bank of the river was the village of Xaslindiñ* at the mouth of a creek of the same name. At the south end of the valley where the river emerges from the cañon is a point of land on the east side. Here was the village of Djictañadiñ known as Tish-tang-a-tang ranch. Just above this village a large creek from the mountains on the east empties into the Trinity. About a mile down the river on the left bank is the village of Xōwûñkût (Kentuck ranch). Just below this village the river swings to the west, meets a spur of the mountain, and then swings back to the east, forming a peninsula. Here, cut off from the rest of the valley, is Medildiñ, "the place of boats" (Matilton ranch). This village with those to the south already mentioned formed the southern division of the Hupa people. This division manifests itself especially in religious matters.

There are evidences of a village on the left bank a little south of the mouth of Supply creek. This has long been deserted. It is said to have been called TōLtsasdiñ. A prison camp was maintained near this site by the military. About a mile below on the right bank was a large settlement, Tsewenaldiñ, transformed by English tongues into Senalton. There are many traces of houses here, but the people were all killed or scattered in the troubled times of the sixties. A short distance below on the same side of the river is TakimiLdiñ, "place of the acorn feast," known as the Hostler ranch. This is the religious center for the whole valley. Here yet stands the xonta nikyaō, "house big," and the taikūw nikyaō, "sweat-house big." These are said to have been built by the people of long ago and to have sheltered the first dwellers in the valley; but, inasmuch as they were

*In the Hupa words, a, e, i, and o are as in father, met, hit, and on; ē, ī, ō, and ū are close sounds as in mate, pique, note, and rule; w and L are voiceless w and l; ñ stands for English ng and c for sh. For a complete key see Hupa Texts.

burned by a party of Yurok in the early part of the last century, the statement is to be interpreted as applying to the foundations only. At this village were held the acorn feast and two of the important dances, and it was the starting-point for the third.

About a mile down the river on the same side was the village of Miskût. This site shows signs of once having been occupied by many houses. A short distance below on the opposite side (west) is a place called Tceĭndeqotdiñ, "place where he was dug up," referring to a well known myth.* This site has been reoccupied since the coming of white people. Kintcū*wh*w*i*kût "on a nose," occupies a point of land on the east bank just below the mouth of Mill creek. There was another village near the beginning of the cañon on the right bank called Xonsadiñ, "deep water place." On the opposite bank at the base of Bald Hill was a village, the site of which is now entirely grown up to trees and brush.

HOUSES.

XONTA.

The xonta was the home of the family, the sleeping place of the women, and the storehouse for the family possessions. Several of them are still standing and a few are regularly occupied (Pl. 2, Fig. 1). They are usually nearly square, being about twenty feet each way on the ground. A place in the center about twelve feet square and five feet deep is excavated to form the principal room. The walls of the above-ground part of the structure are about four feet high on the sides and six or seven feet at the highest part of the ends. These walls are made of cedar plank placed on end. Those of the ends are of varying length to accommodate the slope of the roof. The second plank from the corner on the right as one faces the end toward the river contains a round hole eighteen or twenty inches in diameter and about a foot above the ground. This is the place of entrance. The hole is closed by a plank slid from within.

* Hupa Texts ii.

The planks forming the ends are kept in place by two poles about the height of the eaves, one on the inside and one on the outside, bound together by withes which pass through holes made for the purpose. For plates to support the roof and to hold the sides in place, planks are placed on edge in notches made in the corner planks of the ends. The upper ends of the pieces composing the walls rest against the outside of these plates and are kept from falling out by a light pole inserted in notches in the ends parallel to the plate.

The roof of the rich man's house is in three sections, made of planks laid double, with their lower ends on the plate before mentioned, but with a good projection to carry the rain away from the walls, and their upper ends resting on round poles let into nicely shaped holes in the end walls. The middle section is placed on the upper ends of the other two sections, insuring a fairly tight roof. A plank or two partly pushed aside in this top section allows the smoke to escape. The slope of the two side sections is about thirty degrees and that of the top not more than fifteen degrees. Poor people are said to have been content with a roof of two sections made in the same manner, the upper ends of the planks resting on a ridge-pole.

Along the walls, stones are piled and a good pavement is made across the end. Two stones nicely fashioned are placed on end in this pavement at a place convenient for pulling oneself out of the round door. One went in easily on returning from the hunt, but getting out again after the feast was a different matter.

A second wall is constructed on the inside of the house, across the front end next to the excavation, making an entry way about three feet in width and as long as the house is wide. A second doorway through this wall admits to the house proper. The descent is made by a rude stair, fashioned from a single plank in which steps have been cut. At this place of descent what would otherwise be a corner of the square pit is cut across by a short wall making a fifth side, while the other parts of the pit maintain the form of the square. The fire is in the center of the excavation in a small depression bordered with stones. The only furniture consists of stools, about a foot high, made from a cross section of a tree. Above the fire, poles are arranged for smoking fish and venison.

The earthen walls of the excavated portion are retained by planks placed on edge. On the banks of earth on three sides of the room the winter's supply of food is stored in baskets. Basket material and several partly finished baskets are usually lying about. The implements used in hunting and fishing, and other belongings of the men are also found here. The inner wall across the front end stands even with the wall of earth. In this entry the wood for the fire is stored. The space beyond the fire from the entrance is the post of honor, reserved for guests and the male members of the family. The women occupy the places on either side of the fire. The space next the door is for the slaves or menials of the family. After the men withdraw at night the women spread their beds by the fire. These beds consist of deer-skins, or if the family is rich, of tule mats imported from the coast.

The trees from which these houses were built were felled with fire or with the stone knife and elk-horn wedge. A scarf was cut at the butt and another some feet above. The large slab-like chip was removed with an elk-horn wedge made especially for the purpose with a decided curve near the point (Pl. 3, Fig. 7). After continued cutting and splitting the tree was felled and was split into planks with elk-horn wedges (Pl. 3, Fig. 2), driven home with stone mauls (Pl. 3, Fig. 3). These planks were two or more feet wide and two and a half to three inches thick. The surface of the plank was smoothed with the primitive adze (Pl. 3, Fig. 1). This consisted of a blade of elk-horn or mussel shell firmly lashed with rawhide or twine to a piece of serpentine or sandstone which had been cut to receive it. A flap of buckskin attached to the back protects the hand from bruises.

The circular entrance was chipped out with the adze. Pride was taken in its roundness, for then it resembled the door to the woodpecker's house. Attempts at ornamentation are sometimes seen above the doors, made by cutting down the surface, leaving a triangle or other geometrical figure in relief. These figures are said to have been colored with decomposed stone.

TAIKYUW.

The sweat-house (taikyūw) is for the exclusive use of the men (Pl. 2, Fig. 2). It is a lower structure than the xonta, consisting

of a rectangular pit, the roof only of which is above ground. The pit is about eighteen feet long and fifteen feet wide. There are posts at the corners four and a half feet high and fifteen inches thick. The corners of these posts, which would otherwise project into the room, are trimmed, probably to avoid bruises for one moving about in the dark room. Large round logs resting on these posts form the plates of the sides. The back side of the house has two round posts supporting the plate, while the plate on the front side has but one post near the middle. Round poles placed horizontally are framed into these posts near their bases. Planks placed on end outside of this frame compose the walls of the sides and ends of the building, preventing the caving in of earth. The pit is covered by the ordinary gable roof. Collar beams of good sized logs are placed parallel to the plates and half way between them and the ridge-pole, which is large and in two lengths. A large five-sided post, seven feet high, stands in the center to support the ridge-pole which is in two parts and is made crowning by the central post's being longer than those supporting it at the ends. The covering of the roof is in two sections. Planks are laid from the plate to the collar beams, and from the collar beams to the ridge. Other planks are laid over the joints of these until the roof is water-tight. Earth is banked against the sides and ends, retained where necessary by walls of round stones. Earth is also thrown on the lower sections of the roof. Pieces of an old canoe, or planks shaped for the purpose, are placed rounding side up along the comb of the roof to turn the water. All joints and openings in the gable ends that are not covered by the earthen walls, are filled with clay.

The building is entered by a rectangular opening in the side of the roof which faces the river. The descent is made by a ladder formed of a slab in which three large footholds have been cut. The entrance is closed by a piece of plank laid over the opening. An exit used when it is wished to prevent the cooling of the chamber is in the end near the floor. It is oval in shape. The one measured was fourteen and a half inches in horizontal and ten and a half inches in vertical diameter. This opening is closed by a stopper of plank made to exactly fill the space. A pit large enough to receive the emerging man is dug outside the exit.

This pit is provided with planks which can be laid over it to exclude the rain.

In the house there is a pit for the fire, near the center. This is about sixteen inches square and twenty inches deep, lined with pipestone brought a long distance in canoes. A hearth of stone is laid around this fireplace and to the lower exit. The remainder of the floor is covered with planks of yellow pine, *P. ponderosa*, which have been adzed and rubbed with stones until they are smooth. All cracks are cemented with clay. Two braces are placed on the back side running from the horizontal pole near the floor to the collar beams. The wood for the fire is laid in behind these braces, which seem to have been placed there for the purpose.

The floor is kept nicely swept. The only furnishings are

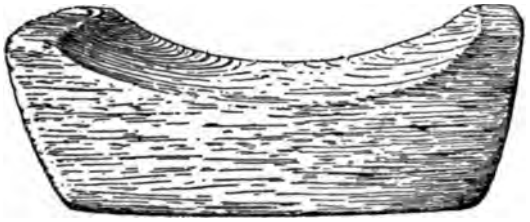

FIG. 1.

head rests of wood (Fig. 1). These blocks are set on edge with a curved top to receive the head. The blocks are about thirteen inches long on the bottom and fifteen on top and four inches thick.

A shelter is sometimes built outside at one end to contain the store of wood. At the entrance planks are placed above and at either side to shelter the man from the wind when he returns from his bath and sits nude to smoke and contemplate. A pavement of flat stones is laid about the front and a path cleared of stones leads to the river.

MINTC.

Near the xonta was the menstrual lodge of the women. There are none of these now to be found. They were called mintc. They consisted of a small pit roofed with planks which met at a

point. In this house the women lived for ten days during and after menstruation, and from thirty to sixty days after giving birth to a child or suffering miscarriage.

DRESS.

The dress of the men was a matter of small importance (Pl. 4). The cold was seldom severe, and from childhood they were accustomed to endure bodily discomforts of all kinds. The dress still worn in the dances corresponds to that described by Gibbs* as having been used in former times. Two deer-skins with the hair on were joined along one side. The necks met over the left shoulder. The robe was held in place by a belt at the waist. The tails of the skins nearly or quite reached the ground. Gibbs speaks of panther-skins being so worn. For other occasions a breech-clout of deer-skin or of several skins of small animals joined together was worn. It seems not to have been deemed indelicate for the older men to go about entirely nude. Old men are yet often seen in such condition about the villages.

Leggings were worn, probably to protect the legs when traveling through brush. They were made of a single piece of buckskin with the seam in the front. The sewing was done with sinew, a fringe being made to hide the seam. The top, which reached the knee, was turned down and also finished with a fringe. Under this turned down portion the string passed which bound it to the leg. Horizontal figures were painted on the skin to add beauty to the garment.

Moccasins were sometimes worn. The soles of these were double. The upper consisted of two pieces sewed along the instep with sinew twine, and up the back of the ankle with a buckskin string. Strings of buckskin were attached to each side of the sole on the outside, and after passing several times around the ankle were tied to hold the moccasin on the foot. These moccasins were of buckskin with soles of elk-hide when that was obtainable.

The hair, worn long, was tied in two clubs, which hung on

* Schoolcraft, Vol. iii, p. 141.

either side of the head, or in a single one which fell behind. A band of some kind was often worn around the head. A ring of stuffed buckskin about two inches thick, covered with the red scalps of woodpeckers, is still worn in some dances in which the regalia are not especially prescribed. In other dances broad flat bands are worn. Feathers or feathered darts are usually worn in the hair also.

Dentalium shells with tassels of woodpecker feathers were sometimes worn in the ears (Pl. 10, Fig. 3). Nose ornaments do not seem to have been in use. The quiver, of some pretty skin, well filled with arrows was a part of "full dress." Another style of quiver of deer-skin without the hair, having the opening on the side was often used as a pocket to hold small articles, but the Hupa had also pockets of buckskin and sacks of netting (Pl. 6) which they wore when needed.

The women modestly kept their bodies concealed from the waist to the knees (Pl. 5). This was accomplished by wearing a buckskin skirt and an apron. The body of the skirt consisted of a single skin dressed without the hair (Pl. 8, Fig. 1). It was about twenty-six inches long and thirty inches wide. A thick fringe about sixteen inches long was attached to the bottom by tying many strips of buckskin to the lower edge of the garment. The top of the skin was folded over and made ornamental by slitting into a fringe about six inches long. This fringe was usually divided into two parts by chains of interwoven twine. The strings of the upper fringe were wrapped with the same vegetable materials which are used in basket-making. When soiled the garment was washed with water and bulbs of *Chlorogalum pomeridianum*. For dance and other special occasions very much ornamented skirts of this kind were worn. The lower fringe sometimes had strands strung with pine nut shells introduced at regular intervals. The top fringe was extended in the finer dresses by strings of shell beads, pieces of abalone shells, and flakes of obsidian.

The skirt, which was tied about the waist above the hips, had the opening in front. The lower part of it covered the back and sides only. The front of the person was concealed by an apron (Pl. 8, Fig. 2) worn under the skirt. This consisted of many

long strands attached to a belt. For ordinary wear the strands consisted of pine nut shells from *Pinus attenuata* strung on twine over which leaves of *Xerophyllum tenax* were braided. The fancy aprons had strands of shells with a row of pendants cut from abalone shells. Beads were worn around the neck. They consisted of small dentalium shells, shells of *Olivella biplicata*, pine nut shells, and small black fruits, *Viburnum ellipticum*.

A blanket of skins was worn over the shoulders to give protection from cold and wet (Pl. 9, Fig. 1). These blankets were from the skins of deer, wild cats, civet cats, and other animals. They were worn with the hair next the body except when it was raining.

A close fitting cap of fine basket-work was worn on the head almost constantly. This gave protection to the forehead from the leather carrying strap of the burden and baby baskets. Many of the women still wear these hats in connection with civilized dress.

The hair, which was worn long, except by widows, was tied into pigtails which fell in front of the ears. A string of buckskin terminating at both ends in shell pendants was passed back of the neck and bound up with the hair by means of strips of mink-skin, which were sometimes covered with woodpecker crests, wound spirally around the clubs. Stems of yerba buena, *Micromeria Chamissonis*, nasdik, were sometimes tied up with the hair to impart their perfume.

Round disks or oblong pieces of abalone shells attached to twine were worn in the ears (Pl. 10, Figs. 1 and 2). The feet were sometimes shod with moccasins similar to those worn by men.

All mature women have marks tattooed on their chins. These marks are vertical and vary in number and width. Sometimes curved marks are added at the corners of the mouth. Delicate marks were placed on the chins of quite young girls. These were added to in size and number later in life. The Hupa deny that they mark age or social status, declaring that they are for ornament only. The tattooing was done by pricking in soot with a sharp flint or a splinter of bone.

FOOD.

FLESH AND HUNTING.

Nowhere in the temperate zone, perhaps, has Nature been more bountiful in providing a variety and abundance of food. The procuring of the animal food was the work of the men.

Elk and deer were killed with the bow and arrow by still hunting or taken in set snares into which they were sometimes driven with the help of dogs. In still hunting the man went either from his home or from a temporary camp to the feeding ground of the animals, reaching the chosen spot early in the morning or late in the evening. Before starting out the bodily odor was minimized by bathing and smoking with green fir boughs. Some of the hunting medicines employed were fragrant and no doubt were of practical value, although they were used from a religious motive rather than for any well understood, direct effect.

The hunter, masked with the head and antlers of the game and covered with its skin, simulated the movements of the animal. This he did so well that not only did the game often approach him, but the ever watchful panther sometimes mistook him for a deer and attacked him. To guard against such an attack the Hupa were accustomed to do up their long hair in a bunch on the back of the neck and to thrust through it long pins sharp at both ends. When the man had worked his way as close as possible, he discharged a well directed arrow which brought down the game. Animals wounded with a barbed arrow are not so likely to survive as those hit in non-vital spots by a leaden ball. The successful hunting of large game without firearms required a splendid physique, senses nearly as keen as those of the animals, and an intimate knowledge of the habits of the game. Few men under such conditions were successful hunters.

Snares were set for elk and deer in some trail which they were likely to use. Sometimes in the surrounding mountains, ridges and cañons are found where there is but one road to the feeding ground, salt-lick, or watering place. These places naturally good for the purpose were often improved by placing obstructions and by making lanes of brush and vines. In this trail at the proper

place was hung a noose so arranged that the passing animal could not escape it. The rope needed to be very strong and the man who possessed a supply of it was rich. It was made by patient twisting together of twine made of fiber obtained from the leaf of the Iris. The deer and elk were driven to these snares by men provided with sticks which they beat upon their hands as a supplement to their shouting. The native dogs are said to have been employed in these drives. Late in summer the grass on Bald Hill and perhaps in other places was fired and the fleeing deer taken in snares or killed with weapons while frantic from fear.

All the region near the valley was held by heads of families as hunting rights. Many men had no holdings of their own but assisted some more fortunate man as dependent friends or as actual slaves.

Deer are now often seen swimming down the river. They are then pursued in canoes and killed with clubs. In primitive times deer were driven into the river by the help of dogs and afterward secured by some one waiting below.

The man who succeeded in securing an elk had a large quantity of welcome food, a skin which, when properly tanned, would defend him in battle from the arrows of the enemy, and antlers which furnished him with material for spoons and wedges.

The deer-skins were also very valuable. They were in constant demand for clothing and bedding. The hides were retained by the master of the hunt. They were carefully removed with flint knives about three and one-half inches long and two inches wide and quite thin. These blades were hafted to short wooden handles. The carcass was cut in accordance with prescribed rules. Some portions were not eaten at all, among them the flesh on the floating ribs and the breast-bone. Other parts were forbidden to women. None of the animal was wasted save from religious scruples. The blood was drunk at once. The stomach in which other parts were put was buried in the ashes until cooked and then eaten. The ears were a delicacy to be roasted in the campfire and eaten after the hunt. The bone of the leg was saved with its marrow, which was of service in mixing paint. The sinews were saved for bowstrings. The brain was removed and dried

that it might be used in dressing the hide. The meat which was not needed for immediate consumption was cut into strips by the women and cured over a fire.

Meat was roasted on the coals or large pieces were placed before the fire and turned until cooked. The basket pot was used for boiling, the heat being applied by dropping in hot stones. The meat was cut in flat pieces called kiniltats, or in strings, LOLkyūwiltōwen, before it was put in to boil. The basket was kept only for this purpose. The meat was served in wooden trays called kisintōkīwat (Pl. 16, Fig. 2). For religious reasons these were never washed. After the meal a wooden bowl (Pl. 16, Fig. 1) was passed for each to wash his hands. The water was carried away from the house and thrown out. This was done to prevent the least particle of the animal remaining in the house.

Squirrels, woodrats, and other small animals were killed with arrows and eaten. The ruffed grouse, pheasant, and mountain quail were killed for food. The small valley quail, the meadow lark, and the mourning doves, birds esteemed by white people, were not eaten by the Hupa. The first two mentioned are thought to spend the day in gambling in the underground regions which are the home of the dead. The stakes are the souls of living men. The snow in winter drives large flocks of the varied robin into the valley. These were taken in snares made of twine, baited with acorns. The Hupa did not eat earth-worms and yellow-jacket grubs as do the Indians of many parts of California.

FISH AND FISHING.

The spring salmon begin to run in April. They are caught with a net which is stretched on three poles, arranged in the form of a triangle. The main shaft is held upright. It is about ten feet long. The lower end rests on the bottom while fishing. About six inches from the lower end a pole six feet long is placed at right angles. From the outer end of this the third pole runs to the upper end of the upright shaft.

A crib of logs and rocks is built out into the stream in the backwater just below a riffle. On this crib is placed a board and on the end of the board is usually seen a block of wood on which the fisherman sits. Hanging close at hand is a club (Fig. 2)

used to despatch the fish before it is removed from the net. Usually the fisherman has a billet of wood or a flat piece of elk-horn in his hand from which a string passes to the body of the net. Any slight motion in the net is easily perceived in this way.

Fig. 2.

The fall salmon begin to run after the first rains in September or October. During the summer preparation is made for catching them. A dam or weir is built across the river at Medildiñ and Takimildiñ in alternate years. Stout peeled stakes are driven in the river bottom in pairs, crossing near the top and firmly withed together. Heavy logs are laid into the crotches thus made, end to end, forming a continuous stringer across the river. Stakes about four inches in diameter are driven on the upper side, about four feet apart, at an angle of forty-five degrees. These are bound to the stringer by withes. A lattice work is then made on the upper side of the dam, consisting of small saplings bound together by chains of withes. This is made close enough to stop the upward migration of the salmon while impeding the flow of the water but little. Small platforms, to stand on while fishing, are made by driving a stake a little below the dam and running poles from the dam to the top of the stake.

The fishing is done at night or when the sun's rays are not too vertical. Tons of salmon are taken if the run happens to be good. The men have a rude shelter on the shore at one end of the dam where they sleep between times of fishing. The dam constructed with so much labor is swept away by the first high water.

Long seine-like nets (Pl. 14, Fig. 1) are set in still water. One of these nets is sixty feet long and three and a half feet wide. It is provided with sinkers of stone, discs three and a half inches in diameter with holes chipped in the centers. Twelve of these are attached to this net. Floats of wood are provided to buoy up the top edge. When the net had been set, several canoe loads of men went out and drove the fish into the net.

V-shaped obstructions used to be constructed in the river; the opening of the V was up-stream, one wing resting on the shore and the other projecting well into the stream. At the point of the V was built a boat-shaped trap of round poles somewhat higher than the surrounding water. The fish passed up around the end of the obstruction. They were frightened back by men in canoes and in trying to escape entered the trap, through the bottom of which the water passed freely leaving them helpless.

Salmon were sometimes speared before the Trinity was made foul by mining. A long pole was provided with two diverging prongs of wood at one end (Pl. 13, Fig. 3). On these prongs were placed spear points (Pl. 13, Fig. 2) of bone about four inches long, provided with two barbs of bone or horn. The point and barbs were united by wrappings of twine covered with pitch. A socket was formed between the barbs to receive the end of the wooden prong of the shaft. A line of doubled and twisted two-ply twine was attached to the spear point. This line, which was about thirty inches long, was made fast to the pole. The spear points on entering the salmon were pulled free from the prongs of the shaft but were still attached to it by the line.

Sturgeon are sometimes taken in the salmon net, or in a stronger one made for the purpose. The sturgeon is valued not only for its mass of edible flesh, but for the glue obtained from its head.

Trout and other small fish are caught in dip nets fastened to three poles arranged in the form of an isosceles triangle. The short third side, bowing out slightly, is at the bottom. The apex of the equal sides is held against the head of the fisherman and the sides are grasped by the hands. The net thus held is drawn to and fro in quick water.

Trout and other small fish were caught in the river and creeks by means of primitive hooks (Pl. 13, Fig. 1). These were made by placing a small sharp-pointed bone between two small sticks at an angle of thirty-five degrees. These were bound together and to the line of primitive twine by careful wrapping with fine thread. These hooks were usually placed on a set line in sets of ten or more.

Lamprey eels are caught in great numbers during the warm

nights of spring. They are taken in nets similar to those used for salmon. The Hupa are equally fond of them in their fresh state or when dried. Suckers used to be caught and eaten by the Hupa.

No poisons, such as the buckeye and soap-root, were used to stupefy the fish in shallow pools. The buckeye is not found in the valley; and the streams are fairly constant throughout the year. These and other means of killing fish by wholesale are resorted to by the Pomo of Mendocino county.

Varying lengths of river shore were held as private fishing rights by the heads of families. These included one or more riffles suitable for the construction of a fishing crib. These rights passed from father to son and were always respected.

The women attend to the dressing and curing of the fish. For cutting fish the stone knife is still used. The salmon eggs are saved and dried. They are used to lunch upon. Probably the Indian knew no form of food more concentrated and at the same time so easily portable for a journey. The heads and the tails of the salmon are used while fresh for immediate consumption. The heads when roasted are considered very fine. The Indians are fond of the cartilaginous substances which are abundant in them. The body of the fish is cut into three or more layers. If the flesh is not held together by the backbone or the skin, round sticks are thrust through to keep the flesh from falling to pieces while it is curing over the fire of the xonta.

Eels are drawn and slit many times to the skin with a sharp bone. They are then hung over the fire to dry.

In dressing and cleaning fish, ferns and leaves are always used to wipe away the blood and unclean portions. Salmon and eels are broiled before the fire when eaten fresh. In the dried state they are sometimes broiled but are often eaten without cooking. They are served on disk-shaped baskets (Pl. 21, Fig. 2) set upon a mat of leaves.

The Hupa used a dish of stone about eight inches long, six inches wide and three inches deep to catch the dripping oil of the cooking eels.*

*These are no doubt the dishes said to have been used by the Hupa for the baking of cakes. Professor Mason was probably misinformed as to their purpose. (The Ray Collection from Hupa Reservation. Smithsonian Report 1886, Part I, p. 217.)

VEGETABLE FOOD.

The gathering of vegetable food is the duty of the women. Acorns constitute the staff of life for the Hupa. Those of tan-bark oak, *Quercus densiflora*, are the most esteemed, but in case of a short crop those of the Pacific post oak, *Q. Garryana*, black oak, *Q. Californica*, and the maul oak, *Q. chrysolepis*, are used as well.

The acorns are gathered in a conical basket called kaitemiL (Pl. 22, Fig. 1) about sixteen inches deep and twenty-one inches in diameter at the top and six inches at the bottom. The basket is carried on the back, the apex resting in the small of the back and the top reaching well to the neck. A carrying strap (formerly of elk-hide) passes around the middle of the back part of the basket, over the woman's shoulders and around her head half-way between the crown and the forehead.

If the weather is good, the acorns are placed in the sun to dry. The roof of the house is often used as a place for drying, a ladder similar to the one used in the house being leaned against the eaves to enable the women to tend them with ease. The acorns are stored in large hampers called djelō (Pl. 23, Fig. 1). One of the largest is thirty-two inches deep and thirty-nine inches in diameter at the base and narrowed at the top to twenty inches. These are made after the close-twined style of Hupa basketry.

As soon as the gathering season is over the shelling begins. This is done by resting the acorn, held between the thumb and fingers, on a rock and tapping it with a stone. The men sometimes assist in this work. The acorns when shelled and split are called djōaslai. They are thoroughly dried and stored again in hampers.

When needed for food the women grind them into flour. A buckskin or cloth is spread down on a hard flat stone which is set in the earthen floor of the xonta. On this is placed a funnel-shaped basket, kaiist (Pl. 24, Fig. 1), about four and a half inches deep, sixteen inches in diameter at the top and five inches at the bottom. The top of this basket is made firm by a heavy rim turned in so as to be horizontal.

The basket is stiffened by withes placed around on the outside covered by the material used in twining the basket. A split withe is also placed inside under the rim for the same purpose. The woman sits with the basket under her legs just below the knees. With the stone pestle, meïst, she pounds the acorns to a fine powder. She has a brush at hand to sweep up scattered meal and to brush it from the mill when she has finished. This brush is made of fibers taken from the sheath of the bulb of soap-root, *Chlorogalum pomeridianum*, bound with buckskin.* From time to time she takes out the fine flour and sifts it in a shallow basket called miLdakidiL (Pl. 25, Fig. 1), by giving it a gentle motion up and down as it is held at an angle over a large basket-pan, kīwat (Pl. 24, Fig. 2). The flour is constantly drawn toward the sifter with the hand. During this process the fine flour runs over the lower edge of the basket, the coarser pieces being retained for a second grinding. At this stage the material is called witwat.

The woman now goes to a place on the river shore where there is washed sand† (Pl. 15, Fig. 1). She scoops out the sand, at the same time building up the edges, until she has a hole large enough to hold her flour. The flour is then placed in this saucer-shaped hole. She builds a fire near by and heats the hard, flat stones kept for the purpose. When they are hot, by means of two sticks she drops them into a basket-pot called miltoi. The water is heated until it is nearly scalding hot. It is then dipped from the large basket with a basket-cup and poured on the flour. As fast as it soaks away more water is added until the material loses its bitter taste. The wet uncooked meal is called kitast.

Before removing the flour the woman roughens the surface with her hand. She then puts her hand on it palm down and removes it, taking up the underlying material with a coating of the sand. She holds this over the basket-cup and washes off the sand (Pl. 15, Fig. 2). In this way it is all taken up and washed. A little is usually cooked on the spot and eaten. The remainder is taken to the xonta and cooked. It is placed in a basket about ten inches in diameter and six inches deep twined

*The supposed hair brush of Professor Mason. Smithsonian Report 1886, Part I, p. 214.

†In winter the sand is often brought to the house and the leaching done inside.

with material taken from the root of a pine. This is water-tight. A little water is added and the hot stones are dropped in. After a few minutes a quantity of water is added with more hot stones. It is vigorously stirred with a wooden paddle called miLteūnakyōkût (Fig. 3). The cooked mush is called saxaūw. The mush is placed in smaller similar baskets called xaitsa. These are passed to the men, each having his own. They eat the mush with spoons of elk-horn (Pl. 16, Figs. 3 and 4) called kitēkin or of wood. The bowl of the spoon is rather large (two and seven-eighths by two and three-eighth inches) with the handle sometimes nearly at right angles to the bowl. The handle is four or more inches long and carved and cut to form geometric designs. These are kept in a basket hanging on the wall of the xonta.

Fig. 3.

The women use a valve of *Mytilus Californianus* (Pl. 16, Fig. 6), in its natural state, for a spoon and often eat from the large pot in which the mush is cooked. The Hupa are very fond of this acorn mush. Those who have plenty of food such as white people use still make the acorn mush occasionally. When a little salt is added it is quite agreeable to a white man's taste. No other food is allowed to one who is preparing for a ceremony. The Hupa used to bury acorns unshelled in the damp ground and let them remain until they were well molded. They were then boiled without being ground. Bread was sometimes made of the acorns by putting the mush on a hot flat rock. This was taken on a journey or to the hunting camp. It was sometimes soaked and eaten as mush.

The hazel-nut, *Corylus rostrata* var. *Californica*, kilatconde, is excellent food. The nuts are ripe in June and July, and are gathered as soon as ripe, for the bears are very fond of them. They are dried and eaten raw from the shell. A few chinquapin, *Castanea chrysophylla*, grow near the valley. The nuts are eaten when found. The nuts of the pepperwood, *Umbellularia Californica*, are roasted in the ashes and eaten. The seeds of the

sugar pine, *Pinus Lambertiana*, are much valued by the Hupa. They go in large companies, men and women together, to the tops of the ridges, where the trees are found, and camp for some time. The seeds are in proper condition for gathering in October. In olden times the men used to compete with one another in tree climbing to secure the cones. Now-a-days the trees are felled and stripped of their cones. The cones are pounded until the seeds loosen and drop or are easily plucked out. These nuts are eaten raw, either shelled or shells and all.

The seeds of the digger pine, *P. Sabiniana*, are also used, but are not so highly esteemed as those of the sugar pine. The cones of the digger pine are eaten in June when they are green. They are rolled in the dust to render the pitch less troublesome, and then trimmed with a knife. The cone is split and the central portion with the soft unripe seeds is eaten raw. It is not an article of food that would tempt a white man.

The Hupa use the bulbs of many plants, mostly the members of the lily family. These have the generic name yinetau. The women dug the bulbs in former times with pointed sticks, the men sometimes accompanying them with their stone knives to renew the points when necessary. The soap-root, *Chlorogalum pomeridianum*, is the largest and most plentiful of these bulbs. They are cooked for about two days in the following manner. A large pit is dug and lined with rocks. A hot fire is maintained until the rocks and surrounding earth are well heated. The fire is then drawn, the pit is lined with leaves and a quantity of the bulbs thrown in. Leaves are placed on top and the whole covered with earth. A big fire is then built on top. The leaves of the wild grape, *Vitis Californica*, and wood sorrel, *Oxalis Oregana*, are used to line the pit, and are also mixed with the bulbs. They are said to improve the flavor. When cooked in this manner they are agreeable and nourishing food. The Indians of Mendocino county seem never to use the bulb of this plant for food, but employ it for stupefying fish,* while the Hupa are ignorant of its value for that purpose. The Hupa use the bulbs of *Calochortus Maweanus*, *Hookera laxa*, *H. congesta*, *Brodiæa multi-*

*V. K. Chesnut, Contributions from the U. S. National Herbarium, Vol. vii No. 3, p. 320.

flora, and probably other species of this genus. The bulbs are roasted in the ashes or boiled in baskets.

The fresh shoots of many plants are eaten raw. Food of this kind is called salūw. Among the plants so used are *Wyethia angustifolia*, tcalatdûñ, *Leptotænia Californica*, mûxatcexōlen, *Heracleum lanatum*, selkyō, *Angelica tomentosa*, xonsiLsalūw "summer salūw."

A seaweed, *Porphyra perforata*, called la, was brought from the coast at the mouth of the Klamath by boats or from Trinidad by parties making the journey overland. This furnished the salt required for good health. One doctor is said to eat this seaweed to make his thirst still more intense when he refrains from water in medicine hunting.

The seeds of grasses, certain *Compositæ*, and other plants were beaten into a basket with a wicker beater (Pl. 23, Fig. 2). They were carefully cleaned by winnowing and hand picking. The seeds were cooked by placing live coals of tan-bark oak among them in a basket-pan. The basket was constantly shaken and tossed to prevent the burning of the seeds and the basket. When the seeds were sufficiently cooked they were pounded in the same manner that acorns are reduced to flour, but with a pestle of lighter weight. The flour was served without further preparation on small saucer-shaped pieces of basket-work. The weeds introduced since the coming of white people have so crowded out and mingled with the native plants used for this purpose that the Hupa do not now attempt to gather the seeds. One woman was found who had a small quantity of seeds gathered many years ago. She prepared these in the manner described.

The valley and surrounding hills furnish an abundant variety and quantity of berries. Many acres are covered with manzanita, *Arctostaphylos Manzanita*, dinūw. The fresh fruit is eaten when ripe in midsummer and even later when it has become dry and powdery. The fruit used to be gathered in large quantities and dried on the sand by the river. When required for food these berries were pounded in the basket-mortar and the flour was separated from the seeds. The flour was eaten dry without cooking. The seeds were soaked in water and the liquid was drunk without fermentation. The fruit of the madroña,

Arbutus Menziesii, isdeau, are shaken in a basket with hot rocks and then eaten. The berries of *Heteromeles arbutifolia*, called by the Hupa isdewitc, "little madroña berries," are also eaten. Huckleberries, *Vaccinium ovatum*, tcwiltc, are very plentiful. They remain on the bushes until Christmas. The berries of the elder, *Sambucus glauca*, tcūhwūw, are eaten. Thimble berries, *Rubus parviflorus*, wûndauw, raspberries, *R. leucodermis*, blackberries, *R. vitifolius*, and several species of *Ribes* (gooseberries and currants), are in fruit during the spring and summer months.

OCCUPATIONS OF MEN.

Bow and Arrow Making.

The bow and a quiver of well made arrows were the essentials of every man's well-being. Upon the perfection of these weapons of war and chase and the man's strength and skill in their use depended his fitness to survive. While he could not rely on another man's skill in their use, he could and did make use of his neighbor's skill in their manufacture. Thus arose among the Indians the beginning of division of labor, which has reached such proportions among us.

The Hupa are fortunate in having for bow-making the yew, *Taxus brevifolia*. Lieutenant Ray, U. S. A., has described the Hupa method of bow-making:

"To make a bow, the wood of a yew sapling, two and a half to three inches in diameter is selected and rough hewn to shape, the heart side inward and the back carefully smoothed to the form of the back of the bow. The sinew is laid on while the wood is green, and held in place until dry by means of a twine wrapping. In this condition it is hung in the sweat-house until the wood is thoroughly seasoned, when it is finished and strung, and in some cases the back varnished and painted. The most delicate part of the operation is to get the proper tension on the sinew backing. If it is too tight the wood crimps or splinters when the bow is strung, and a lack of proper tension leaves the bow weak and worthless. When the bow is seasoned it has a reverse curve of about three inches."

"The sinew for the backing and bow-string is taken from the back and the hind leg of the deer at the time of killing, and dried for future use. When required it is soaked until pliable, stripped into fine shreds and laid on by commencing at each end and terminating at the center of the bow."

"The glue used to fix the backing is obtained by boiling the gland of the lower jaw and nose of the sturgeon. This is dried in balls and preserved for use, and is prepared by simply dipping it in warm water and rubbing it on the wood."*

These Hupa bows (Pl. 11, Figs. 1, 2, and 3) are short and wide as compared with those in use east of the Rocky Mountains. One which was measured is three feet three inches long. The string from nock to nock is three feet. The unstrung bow has a reverse curve of five inches. The middle of this bow is one and three-fourths inches wide, expanding to two and one-fourth inches at the middle of the limbs and contracting to five-eighths of an inch at the nocks. The nocks are an inch long and are bent back at an angle of about forty-five degrees. The middle of the bow is wrapped with buckskin for a space of three and one-half inches to give a firm hold for the hand. This bow is provided with a string of sinew twine about one-eighth of an inch thick. Hupa bows are sometimes decorated with paint on the back. The designs are often triangles.

Lieutenant Ray, in commenting on the power of these bows, says: "The bows made by these people are effective for game up to fifty or seventy-five yards, and would inflict a serious wound at 100 yards. At fifty yards the arrows will penetrate a deer five or ten inches. I never heard of one passing entirely through a deer."†

Walter Van Dyke, writing in the *Overland Monthly* for December, 1891, p. 658, speaking of a wound which was received by a companion during the exciting times of 1851, says: "An arrow struck him about the middle of the left thigh and passed clear through." Such a shot, it is evident, would have passed through the softer parts of a deer's body. The Hupa declare that they did sometimes shoot through a deer.

* Smithsonian Report, 1886, Part I, p. 228.

† Smithsonian Report, 1886, Part I, p. 229.

The war and hunting arrows of the Hupa (Pl. 11, Fig. 4) are from thirty to thirty-six inches long. The average length is about thirty-two inches from nock to point. Most of these arrows are provided with a foreshaft. The main shaft is made from the straight shoots of the syringa, *Philadelphus Lewisii*, kaxûs. The pith is removed and a foreshaft about four inches long made of the June berry, *Amelanchier alnifolia*, a very hard wood, is inserted. The end of the shaft is wrapped with sinew to prevent its splitting. The nock is usually but not invariably cylindrical. Three feathers from the hawk, split through the quill, are attached to the shaftment by wrapping them at each end with sinew. The feathers are trimmed until they are of uniform length and size. The points are secured to the foreshaft by sinew thread which passes into notches made for the purpose in the sides of the base of the points (Pl. 12, Fig. 2). Sturgeon glue is added to prevent the threads from slipping on the wood.

The points of the arrows are of obsidian, flint, bone, or iron, and are now sometimes made of bottle-glass. After a suitable piece of obsidian, flint, or glass has been removed with a blow it is worked into shape by placing it on a piece of buckskin laid on the left palm and held with the fingers of the left hand and applying pressure with an implement held in the right hand (Pl. 12, Fig. 1). The flaking tool (Pl. 12, Fig. 3) consists of a piece of antler lashed to a stick of wood about fifteen inches in length. This handle passes back through the hand and along the fore arm, giving leverage for considerable pressure. Old Rodger, the only Hupa who can now chip stone, made two arrow-points of black obsidian in about two hours' time. One of these he condemned and the other did not satisfy him. He did the first flaking on each with a large flat file, applying pressure with the tip of the handle end. The latter part of the work he did with the primitive implement, finishing with a large blunt awl (Pl. 12, Fig. 4).

The shaftment and sometimes the foreshaft was marked with rings in blue, black, and red paint. The professional fletcher made a large number of arrows at a time. He did not finish a single arrow and then begin another, but kept all in the same

stage as the work progressed. When finished they were sorted into certain lengths and each length was given distinctive markings. The purchaser secured a quiver of arrows of uniform length and markings. He was able to recognize his arrow when found in a slain man or deer, and to prove his claim by referring to the remaining arrows in his quiver.

For hunting small game and for shooting at a mark, arrows without points but with a foreshaft were used (Pl. 11, Fig. 5). If the foreshaft broke a new one could be quickly inserted. For the use of boys, quite small arrows (Pl. 11, Fig. 6) were made of huckleberry, *Vaccinium ovatum*. They were provided with two unsplit feathers from the yellow hammer's wing. The shafts of arrows were sometimes made of elder, *Sambucus glauca*. A large stem was split, yielding straight pieces suited to the purpose.

NET MAKING.

For nets and snares the Hupa make twine and rope from the leaves of *Iris macrosiphon*, mestcelen. The material is said to be better when taken from plants growing under oaks than from those found under pines. The leaves are gathered in the fall when fully mature. Two fibers only are obtained from each leaf near the margins. The fibers are separated from the rest of the leaf by drawing it past the thumb on which an artificial nail made from a mussel shell is worn (Pl. 14, Fig. 3). This shell is held in place by a strip of buckskin through which the thumb passes. The fibers are twisted by rolling them between the palm and the thigh, as a shoemaker twists his thread. The final product is two-ply and as large as desired.

The twine for net making is wound on a bobbin (Pl. 14, Fig. 2) about eighteen inches long and having in each end an oval eye. The diameter of the eyes are about three-fourths and five-eighths inches. The ends are pointed for convenience in tying the net. Slits are provided through which the thread passes readily to and from the eye.

Professor Mason says: "The net is knotted like those of civilized people; that is, the thread of each mesh is brought down around the mesh-stick (Pl. 14, Figs. 4 and 5), then through

the bight of the stitch above, and fastened by a half hitch quite around both strands of the same mesh."*

Hide Dressing.

The Indians prized the skins of various animals for use and ornament. The deer and elk furnished clothing and bedding. Buckskin was used for many purposes, for wrapping, covering, and tying articles. It largely took the place of cloth, paper, and string with us. A fine deer-skin which was peculiarly marked, nearly or entirely black, or nearly or entirely white, was dressed with the hair on and used in the White Deer-skin Dance. The white deer-skin became an heirloom which could not be sold. A particularly pretty fawn-skin with its rows of spots was saved for the dance or made into a quiver. The skin of the panther was worn by the men as a robe. The skin of the silver fox, *Vulpes fulvus argentatus*, was much prized for its beauty and was made into a quiver for "dress occasions." The water animals, the otter, the fisher, etc., were all valued for their beautiful, fine fur. Their skins were used for quivers. Last and least of all the little mole gave up its skin to the babies for a plaything.

A skin was dressed with the hair left on by scraping it faithfully with the rib of a deer and with stone scrapers. The surface was anointed with a concoction of deer brains and water, and manipulated with the hands until it was soft and pliable. When it was desired to make leather from the skin of the elk, deer, or panther, the hair was scraped off after the hide had been macerated by leaving it buried in wet sand for several days. They were not able to render the skins impervious to water by tanning.

Pipe Making and Tobacco Raising.

Smoking has been practiced by the Hupa from time immemorial. Their gods smoked. It is in fact a semi-religious practice. The pipe, kiñaigyan, was and is still made of selected wood of the manzanita or yew. The ordinary pipe (Pl. 17, Figs. 2 and 3) is about four and one-half inches long, and cylindrical in shape.

*Smithsonian Report, 1886, Part 1, p. 225, and Pl. xix.

The diameter at the smallest part is about three-eighths of an inch. A gentle curve gives the mouth end a diameter of five-eighths of an inch and the bowl end an inch. The pipes are worked down with sandstone and polished off with stems of the horsetail rush, *Equisetum robustum*, in so fine a manner that even Professor Mason was deceived, thinking them turned by white men in a lathe.*

Usually the pipe is faced with serpentine or sandstone. The face of stone (Pl. 17, Fig. 5) shows only about one-half an inch on the outside, but it enters the funnel-shaped wooden part so as to line the bowl of the pipe. The bowl is three-fourths of an inch deep. A shoulder is made on the wood of the bowl; then the soapstone is brought into shape with a knife. The pieces are constantly tried to insure a good fit. To make the joint perfect between the wood and the stone, a little sand is put in, and the stone is twisted to wear away any projections. The shaman's pipe (Pl. 17, Fig. 6) is similar but much longer, some of them measuring twelve inches. Often narrow stripes of mother-of-pearl are neatly inlaid, lengthwise the pipe next to the stone facing. Pipes entirely of wood are also used. These are of the smaller size and are ornamented at the bowl end with carvings. The Hupa occasionally make pipes all of stone (Pl. 17, Fig. 4). Such pipes are frequently to be seen in use on the Klamath river. The pipe is carried in a little sack of buckskin (Pl. 17, Fig. 1) tied with a string of the same material. Tobacco is put into the bag and then the pipe is pushed in bowl first, not stem first, as Professor Mason has pictured it.†

The tobacco used was cultivated, the only instance of agriculture among the Hupa. Logs were burned and the seed sown in the ashes. The plant appears to be and probably is identical with the wild *Nicotiana Bigelovii*, but the Hupa say the cultivated form is better. The wild form found along the river they say is poison! It is believed that an enemy's death may be caused by giving him tobacco from plants growing on a grave.

MISCELLANEOUS.

It was the man's duty to make the fire-sticks (Pl. 17, Fig. 7) when new ones were needed to replace the worn out ones. A

* Smithsonian Report, 1886, Part I, p. 220.
† Smithsonian Report, 1886, Part I, Pl. XVI.

piece from the root of the cottonwood is obtained for this purpose. After it is well seasoned by hanging in the sweat-house, one piece is worked down until it is about a foot long one inch wide and three fourths of an inch thick. Several small shallow holes are made on one side of this. Little grooves are cut from these holes to the edge of the stick. Another piece is made about fifteen inches long and one-half inch in diameter, pointed at one end. To start a fire the last mentioned piece is whirled rapidly in one of the holes of the first piece. Soon little glowing dust runs down the notches and ignites the prepared tinder.* During leisure times the men occupied themselves in making the articles used in the dances. Objects of feathers and fur subject to attacks from moths were kept in oblong wooden receptacles provided with covers which fitted perfectly. Wealth consisted largely of the non-essentials of life. These they were always seeking to accumulate. The man's only routine work was the bringing of wood for the sweat-house. This was usually done in the early morning.

OCCUPATIONS OF WOMEN.

Basket Making.

For basket making the woman needs slim round twigs for upright ribs, pliable material for twining around horizontally, and dyeing material to make her basket more beautiful.

For ribs she goes to a place where a fire has burned over a hazel patch. She finds there shoots all of a size. For the larger baskets she takes the shoots the second or third year after a fire. These shoots are from *Corylus rostrata* var. *Californica*, called mûkaikitɬoi, "on it one makes a basket." They are gathered as soon as the sap is well started and the leaves have commenced to grow. The twigs must be peeled while still fresh. The woman takes the butt of the twig in her mouth and starts the bark with her teeth, then, keeping hold with her teeth, she pulls the twig out of its skin with her hands. The peeled twigs are piled in bundles (Pl. 20, Fig. 3), dried in the sun, and laid away for

*Hupa Texts xii.

future use. The foundation of nearly all Hupa baskets is of hazel. For small, fine baskets young shoots of a willow, *Salix fluviatilis* var. *argyrophylla*, are used. They result in more shapely but not so durable baskets.* This species of willow is not common in the valley, but grows at Willow Creek, twelve miles south. The native name of this willow was kitdilmai, "gray," but it is now usually called tōxatawe, "it grows by the water," to avoid the name of a dead person.

The pliable material used for twining is of three classes: first, strong filaments, made from the roots of deciduous trees, used where extra strength is required, especially at the origin of the basket; second, serviceable material for baskets which must hold water, obtained from the roots of coniferous trees; third, white and colored material for ornamentation. For the first class of material, called kût, the roots of alder, *Alnus Oregana*, willow, *Salix* sp., cottonwood, *Populus trichocarpa*, and wild grape, *Vitis Californica*, are used. The second class, called xai (Pl. 20, Fig. 2), is derived from the digger pine, *Pinus Sabiniana*, nadeL, yellow pine, *Pinus ponderosa*, diltcwag, and two varieties imported occasionally from the coast, redwood, *Sequoia sempervirens*, and lowland spruce, *Picea Sitchensis*. The roots of different individual pines of both species vary in value. Some are very hard to split. The chunks of root are buried in a hole where a fire has been built. If after one night they do not readily separate into thin flat pieces, the fire is renewed and the root is baked again. These layers are soaked in water and scraped until smooth and uniform. They are then divided into strands of the desired width.

For decorative work the leaves of bear-grass, *Xerophyllum tenax*, LōteL (Pl. 20, Fig. 4), give a clear white, and the stems of the maidenhair fern, *Adiantum pedatum*, mûkaikinxûLnewan (Pl. 20, Fig. 5), furnish a glossy black. The leaves of the *Xerophyllum tenax* are gathered in the late summer when the tips begin to show white. They are then tough. The ground is frequently burned over and the spot visited on the second or third year after. This plant is very common on dry ridges at an elevation

* Willow shoots were not formerly used. Growing along the river as they do they were thought to belong to the under-world. The willow is attacked by insects from which the hazel is exempt.

of from two to four thousand feet. The leaves are tied in bundles and kept until needed. The stems of the maidenhair fern are gathered when full grown. They are pounded with a stone until the black outside shreds off. The stems of the giant fern, *Woodwardia radicans*, mēme, furnishes a material which takes a reddish brown color from the bark of the alder. Small strands are stripped from the inside of the stem. The woman chews the alder bark and then draws the strand through her mouth. In this way a permanent color is imparted to the material. Some Hupa women now dye the fern stems in a decoction of alder bark made by boiling it in water. The color obtained is said not to be so uniform or so permanent. The leaves of *Xerophyllum tenax* are dyed bright yellow with a lichen, *Evernia vulpina*, which grows abundantly on the trees at high elevations. The lichen is boiled for some time and the material is immersed in the liquid until the proper color results. The root of the Oregon grape, *Berberis* sp., is sometimes used to dye the *Xerophyllum tenax*, a similar shade of yellow resulting. Porcupine quills are sometimes dyed with *Evernia vulpina*, which gives them a very bright and glossy yellow.

The Hupa baskets are of twined work as distinguished from the coiled work of Mendocino county and Southern California, and from the plaited work of the East. That is, in the twined work the heavy foundation is vertical from the center to the rim of the basket, and the woof of lighter material is horizontal; while in coiled work the heavy foundation is laid in horizontal coils around the basket with the filling run spirally around the heavy twigs. As distinguished from the plaited work of the Algonkin, the twined work is done with two strands carried simultaneously, alternating above and below each other, completely hiding the foundation, while the plaited work is done with one strand and shows the foundation and woof alternately. The closely twined work of the Hupa is quite flexible, but returns to its proper shape which it maintains very well. The coiled work of the Pomo is exceedingly rigid and firm. The Hupa baskets are either close-twined so that the foundation does not appear at all, or open, the twigs of the foundation being merely held in place by chains of woof.

The simplest example of twined work is seen in the lattice work used in the fish dams. The split, peeled poles, about an inch in diameter, are held in place by three or more rows of chain, made of two strands of withes crossed between the poles. This part of the weir may have served as the pattern for twined baskets. The nearly flat disks of open work used for serving salmon (Pl. 21, Fig. 2) are made by joining hazel twigs by their butts at the center and letting the tips radiate toward the rim. Smaller hazel twigs are twined around in a spiral about an inch apart. Additional radiating ribs are inserted in the chains, as the rim is approached, to make the meshes of even width. The end of the radiating twigs are trimmed beyond the last round, which is double. To give the basket a concavity, the outer rounds of chain are drawn tighter than the rest, the ribs being kept wet and gently bent with the hand.

Similar work of greater concavity results in the burden-basket (Pl. 22, Fig. 1). A heavy rim projecting toward the inside at right angles to the wall of the basket is made by twining several strands at the top. This adds greatly to the rigidity of the top of the basket. The baby-basket (Pl. 21, Fig. 1) is made of similar open-work, except that the ribs of the back start from a heavy horizontal twig of hazel which forms the bottom instead of all coming from a point, as in the ordinary basket. The chains occur in twos or threes, and are about four inches apart. The ribs of the sides are joined by laying the butts together at the medial line in front. They are then carried to the top in curves parallel to the bottom and the edges of the back. The chains of the back continue around the sides to the rim, which is strengthened by grouping the ribs and covering them with spirally coiled strips of flat material.

For storing fish the Hupa made baskets, called kaitcint, with the chains of the woof far apart as in open work but the ribs close together in groups of threes or fours.

The basket for cooking soup (Pl. 15) has ribs of hazel joined at the origin which is made by a close wrapping of strong basket-stuff, either xai from the root of a coniferous tree, or kût from the root of a deciduous tree. These pieces of root are continued to form the woof, twined as already described, except that at the

commencement the two pieces of woof do not cross after each rib but after groups of four and five. When about five rounds have been twined in this way, the regular crossing after every rib is begun. When the bottom has been completed, a raised ring is formed on the outside by carrying three strands instead of two and by including two ribs between the crossings of the woof (Pl. 20, Fig. 1). Once or twice around and the work goes on as before, crossing after each rib. This ring is introduced to hold the ribs more firmly at the turn of the basket. The ribs are kept moist by letting them slip through the wet hand. Sometimes it is necessary to put the whole piece of work in water and take up another. New ribs and new strands of woof are introduced at pleasure. The ends of the woof strands are left projecting on the inside until the weaving is done. When the place on the wall of the basket has been reached where ornamentation is to begin, figures, usually geometrical, are made by laying thin strips of *Xerophyllum tenax* leaves over the woof (Pl. 25, Fig. 2). The *Xerophyllum* placed outside gives the white; the root itself is brought into view for the brown. The *Xerophyllum* strand does not displace one of the strands of root but supplements it, covering the outside when white is wanted in the design. About three-fourths of the way to the top two raised ridges are often made by laying pieces of the pine-root around the basket on the outside and wrapping them with the white *Xerophyllum*. Between these two ridges are one or more rounds twined in the usual manner. The figures introduced above the ridges are symmetrical with those below but inverted. The rim requires no finishing other than trimming the ends of the ribs even. The ends of the material introduced during the weaving are rubbed off on the inside by means of a piece of stone. A basket made in this manner is water-tight and will last many years in common use as a cooking vessel.

For collecting seeds a basket similar in shape to the common burden basket was made in the closely woven style (Pl. 22, Fig. 2). The lower third of the basket was covered with vertical stripes. The remainder furnished a zone for designs.

Large storage baskets, called djelō, are made of close-twined work (Pl. 23, Fig. 1). The base is of greater diameter

than the top.* These baskets, on account of their unusual height and the consequent great width of the zone, usually have the designs in long vertical bands.

Saucer-shaped pans of varying size are made. A small one in the University museum is eight inches in diameter. It is provided with a loop for the finger like a tea-cup. Pans of this size called miLkitūwat, were formerly used to serve the flour from native seeds. The larger specimens (Pl. 24, Fig. 2), one of which measures twenty-four inches, is used to catch the acorn meal when it is sifted. Baskets of this kind are decorated about the origin and in a regular zone on the convexed side. When they have been completed they are wet and turned, bringing the finished and decorated surface inside.

The common hat, kōstan, worn by the older women, is made of the root-material and quite plain. The younger women wear highly decorated, and often very beautiful, caps (Pl. 26). The origin is made of kût, the root-material from deciduous trees. After seven or eight rounds pine-root is used. This is entirely hidden by the decorative material. The body is in white, made by overlaying the root-strand with *Xerophyllum tenax*. The choicest hats have black designs made from the stem of the maidenhair fern, relieved sometimes with a bright yellow obtained by dyeing *Xerophyllum* leaves with the yellow lichen. The more common ones have the designs in red, obtained by dyeing the inner part of the stem of the giant fern with alder bark. These are relieved with black.

The under strand of root is kept damp while the work is going on. Great care is required to maintain the correct amount of moisture or the basket will have humps from the uneven contraction of the drying material. Fine work can not be done on a windy day as the material dries too rapidly. A raised ring, made with a single round of three strands of strong root material like that used at the origin, is introduced at the beginning of the wall and another about three-quarters of an inch from the rim. This is done to hold the ribs in place and to prevent the spreading of the basket. For extra fine work grape-vine roots are used for the under strand throughout the basket. These furnish a more pliable filament than do pine roots.

* Supra p. 27.

The raised rings divide the surface of the hat into three areas for decoration, that from the origin to the first ring, that from the first ring to the second, and that from the second ring to the rim. The origin is usually surrounded by a few rounds in unbroken color, after which the designs are introduced on a ground of white. From ring to ring on the side is the principal zone of decoration, not only on the hats but on all decorated work. Usually colored bands border the zone at top and bottom next to the rings. These bands may be straight and plain, straight with colors alternating vertically, straight with colors alternating horizontally, or zig-zag. Care is sometimes taken to make the bands wider or narrower, according as the basket diminishes or increases in diameter. One example has bands of three rounds at the bottom and four at the top. This zone on the side is divided horizontally into halves. The dividing line is usually imaginary, but occasionally expressed. The design is repeated three or four times in the circuit of the basket and occurs inverted, whenever it is invertible, in the upper half of the zone. The figures either rest upon each other at the middle of the zone, or, when their bases are broad and tops narrow, pass each other and the median line (Pl. 25, Fig. 4). The space between the last ring and the rim contains a fraction, usually a half, of the design used in the principal zone.

With a few exceptions all the known designs upon Hupa baskets are geometrical figures or combinations of geometrical figures. These figures and the combinations of them have names. Perhaps the most frequent figure seen, not only on their baskets but on other decorated objects, is the isoceles triangle (Fig. 4).

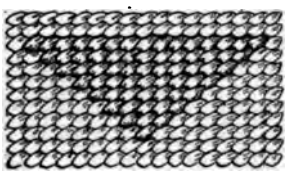

Fig. 4.

The Hupa calls this Lūwmintcwūw, "rattlesnake's nose." When questioned they invariably answer that it is so called because it looks like a snake's nose, and that it does not represent that animal. This figure results, in weaving a basket, from a single stitch of color followed in each succeeding round by an additional stitch on each side until the required size is obtained. The same figure inverted is constructed by taking a base line of

the desired length consisting of an odd number of stitches. In each succeeding round one stitch is omitted on each side until only one is left to form the apex. The equal sides of this figure must be neither horizontal nor vertical. Right-angled triangles made with a horizontal line meeting a vertical line are called tcesLiñalwiltcwel (Fig. 5), said to mean "sharp and slanting." This figure results by receding from a given point or base line one stitch at a time on one side only.

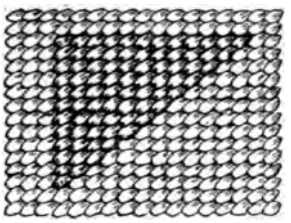

FIG. 5.

If the first figure, the Lūwmintcwūw, is truncated we have a quadrilateral. This figure (Fig. 6) results by starting with a

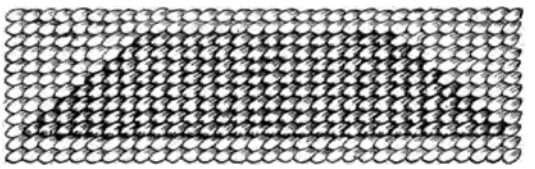

FIG. 6.

line of some length and adding one stitch to each side each succeeding round, or by starting with a base line and discontinuing the narrowing before a point is reached. This figure is often, perhaps always, found associated with the isosceles triangle called Lūwmintcwūw.

Rectangles are sometimes seen. They are hard to construct

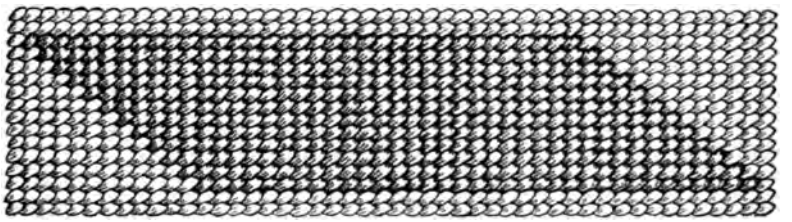

FIG. 7.

on the curved surface of a basket which is increasing or diminishing in diameter, and the result is not pleasing. Oblique-angled parallelograms are very frequently used (Fig. 7). The

name given to them is niLkûtdasaan, "set on top of one another." This doubtless is the name when they are superimposed and not the name of the figure itself. They seldom occur under other circumstances and perhaps the element has no name. They

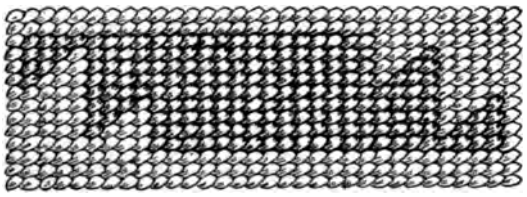

Fig. 8.

result in weaving from a base line from which the weaver recedes on the right and advances on the left one stitch at a time. This figure seems usually to have the upper angle toward the left.

A figure closely resembling the last, since it has the general outline of the rhomboid, differs from it in that it has angles projecting from the oblique sides with the outer line vertical and the line next the figure sloping. This design, which lacks beauty on account of its jagged appearance, is called mikyōwe mila, "grizzly bear his hand" (Fig. 8 and Pl. 26, Fig. 2). Another figure, that seen in Fig. 9 and Pl. 25, Fig. 2, is called tcwal mila, "frog his hand." These

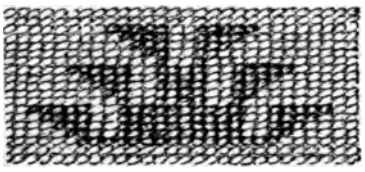

Fig. 9.

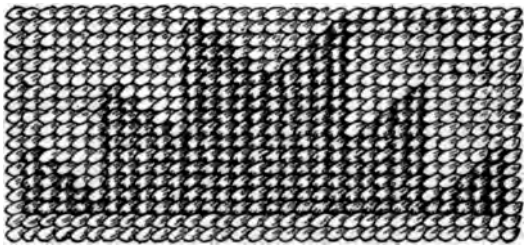

Fig. 10.

designs are fairly frequent on the oldest baskets. I know of no significance other than that implied in the name. A third design (Fig. 10 and Pl. 25 Fig. 6) has angles projecting upward,

with the vertical lines on the outside of the figure and the oblique lines sloping inward and downward. This pattern is called testcetcmikye, "swallow's tail," or tcaxtceûñeL, "points sticking up," a name which is applied indiscriminately to series of projecting angles.*

When the isosceles triangles called Lūwmintcwūw are grouped one above another they are called Lūwmintcwūw niLkûtdasaan, "snake's nose piled up." When these figures come back to back so as to form diamonds alternating with the background, they are called Lōkyōmenkōntc, "sturgeon's back." When the figure apex down is superimposed on a trapezoid the name tca is given to the design (Pl. 27, Fig. 1). These figures are nearly always so connected as to encircle the basket, when the name LenaLdauw is given to it, signifying "it encircles." A design which seems to be the trapezoids superimposed is called LekyūwiñeL, "they come together." The conception of the design seems to be that of the second variety of triangles back to back. A series of rectangular parallelograms superimposed so that each higher one projects to the right of the one below it, the whole being bordered by a double line conforming to the outline, is called qōwitselminat, "worm goes round," or "worm's stairway." The oblique-angled parallelograms in pairs with the upper one projecting to the right is the design most frequently found on the hats (Pl. 25, Fig. 5). They are found in series on the storage baskets, djelō. Usually even numbers are employed, preserving the symmetry of the zone. This figure appears the same either side up.

This design and others presenting a mass of color usually have that mass broken in some way. Designs in red often have horizontal lines in black. Oblique lines in white often run across the design. When such lines run through the oblique-angled parallelograms (Pl. 25, Fig. 5) they are called niLkûtdasaan mikitewesō, "one-on-the-other its scratches." Instead of straight lines, broken lines and series of geometrical figures are often employed. The lines are often run in such a manner as to divide

*The baskets designs here given are not all of those used by the Hupa. Dr. A. L. Kroeber has in preparation a paper on the basket patterns of the Indians of this region.

the large figure into smaller ones of the same or of different kind (Pl. 25, Fig. 4). The large figures are frequently bordered with rows of smaller figures or with continuous or intermittent lines.

MEASURES.

The common measure of value among the Hupa was the decorated dentalium shell (Pl. 18, Fig. 2). This money is known in the region as allikochik, a word said to be of Yurok origin. The Hupa name was nadīyau, but it is now often called miLkyō-xait, "what one buys with," to avoid speaking the name of a once prominent man now dead who was named Nadīyau. The shells are wrapped spirally with fish-skin or snake-skin and usually have a tuft of red feathers, probably from the woodpecker's crest.

The individual shells are measured and their value determined by the creases on the left hand. The longest known shells were about two and a half inches long. One of them would reach from the crease of the last joint of the little finger to the crease on the palm opposite the knuckle joint of the same finger. The value of such a piece in early days was about $5.00. Shells of this length were called diñket. The next smaller shells were called kiketûkûtxoi, and measured about two and three-eighths inches. They were worth about $1.50 each. A shell which was one and one-eighth inches long was called tcwōlahit and was valued at $1.00. The smallest shells were about one and seven-eighths inches long and were called xōstanhit. Their value was from twenty-five cents to fifty cents. Shells smaller than these were not rated as money and had no decoration. The length of the shells smaller than the first mentioned was determined by applying them to the creases of the middle and other fingers of the left hand.

This money was strung on strings which reached from the thumb nail to the point of the shoulder. Eleven of the largest size filled such a string and was therefore called mōanaLa. Twelve shells of the next smaller size composed a string and were called mōananax. Thirteen shells are called mōanatak, and fourteen of

the smallest shells, called mōanadiñk, was the largest number placed on a string. These strings are approximately twenty-five inches long. This, as it appears, was the least common multiple of the individual standard lengths.

Since all hands and arms are not of the same length it was necessary for the man, when he reached his maturity, to establish the values of the creases on his hand by comparison with money of known length as measured by some one else. He also had a set of lines tattooed on the inside of the left forearm. These lines indicated the length of five shells of the several standards. The measures were subdivided, there being lines for mōanaLa long and mōanaLa short, and so on. This was the principal method of estimating the money. The first five on the string were measured by holding the tip of the first shell at the thumb nail and drawing the string along the arm and noting the tattooed mark reached by the butt of the fifth shell. In like manner the last and intermediate sets of five were measured.

This shell money was carried in boxes of elk-horn (Pl. 18, Fig. 1). They varied considerably in size and length. The specimen measured is six and one-quarter inches long and two and one-half inches in diameter. The diameter is usually uniform throughout the box except that raised rings are left around each end. The natural curve of the horn is maintained. An oblong slit is made along the inner curve. Through this the porous core of the horn is removed, leaving a large cavity to hold the money. The opening is generally provided with a thin flat cover of elk-horn although specimens offered to collectors usually lack them. Holes are sometimes provided in the body of the box to receive the ends of the cover which springs into place. A strip of buck-skin or fur is wrapped around the box to hold the cover secure. Soft fur is sometimes placed in the box to keep the shells from rattling about and breaking. A bug, or some herb, is also often put in with the money as a charm to attract more. The exterior of the box, especially about the ends and the opening, is decorated with carvings of geometric figures. Besides these boxes, soft fur, usually mole or mink skin, was used to wrap the money. Strings were provided for tying the package.

Valuable property of any kind could be given in barter but the scalps of the pileated woodpecker and the smaller woodpecker had a fixed value. The former are now considered to be worth a dollar each and the latter ten cents each.

As redwood is not found on the Trinity, except a few trees in one spot, the Hupa import all their canoes from the lower Klamath. Some standard of measure of extension is required to estimate their size and relative value. The canoes are quite uniform in length, being about eighteen feet outside measure, but vary in width and depth with the size of the tree from which they were made. The older Indians have a series of marks tattooed on their legs similar to those on the arms by which money is measured. By means of these the height of the canoe is easily estimated. The width marked on a paddle handle is ascertained by measuring with the extended arms. Nearly all articles were manufactured by reference to the tattooed lines or to some part of the body as a measure.

SOCIAL CUSTOMS.

Matters of Sex and Motherhood.

The Hupa women, as has been said above, slept in the xonta, while the men occupied the taikyūw, or sweat-house. This statement applied to the married men and women as well as to the unmarried. When the weather became warm in early summer brush shelters were erected along the river. In these the people lived until the cool weather of fall when the hunting season began. During the summer only was cohabitation allowed.*

The prospective mother during the first four months of the term "made medicine" for herself† and observed certain things regarding the food she took and her manner of taking it. The object assigned for these practices is that the child may be small but strong at the time of its birth. When the end of the term

*See Hupa Texts xlii.

This fact has been noted in connection with California Indians before. See Adam Johnston in a paper entitled: The California Indians—Their Manners, Customs, and History, published in Schoolcraft, Vol. iv, p. 224.

†See Hupa Texts xxx.

drew near, the woman carried in her basket, when she went for wood, a white stone knife. Sometimes she returned with her child instead of the load of wood or in addition to it. If she was delivered at home she was taken to the mintc, where the elk-hide strap of the burden basket was hung up for her to pull upon, and a stick was placed between her teeth. She sat during labor. Some woman made for her the required medicine.*

For ten days she and the child remained in the mintc. The mother sat or lay over a pit in which heated rocks were covered with wet sand. It was thought that the steam assisted in healing any injured parts. If the child were a boy she was obliged to eat by herself for forty days. She was forbidden meat and fresh fish. For a girl baby the term of isolation was fifty days, and sixty for a miscarriage.

CARE OF CHILDREN.

During the first ten days of the infant's life it was thought to be subject to attacks from evil spirits. The fifth day was supposed to be one of especial danger. After the eighth day the child was considered fairly safe. To counteract these evils and to procure a good fuutre for the child, medicine was made. There are three kinds of these medicines; one to make the child grow fast, one to make it grow strong, and one to cause it to reach old age.† These medicines were made on different days of the ten which it spent with the mother in the mintc. Some doctor who knew the medicine sought the herb in the mountains, repeated before it the long formula which recites the discovery of the herb and its remarkable benefit to the first child, and pounded it ready for use. The preparation was placed in a basket-pot with water and boiled. The child, tied up in the open-work plate, kaitel (Pl. 21, Fig. 2), was held in the steam and nearly cooked. Many children are said to have died during the ten days of medicine-making. At the end of the ten days a little of the infant's hair was cut off and put in the fire. It was thought that the divinities on smelling the burning hair became cognizant for the first time of the child's existence.

* See Hupa Texts xxxii.

† Hupa Texts xxxiv, xxxv, and xxxvi.

The end of the umbilical cord when it falls away from the navel is placed in a buckskin bag and put around the baby's neck where it remains for about two years. One of the men then takes it to a high windswept point, where he selects a small Douglas spruce, splits it from the top down, places the buckskin bag in the opening, and ties the tree together again. The fate of this tree is watched and the future of the child judged accordingly. The grandmother, if one lives in the house, ties a small dentalium shell to the ankle of the baby. This remains until the mother's relations with her husband are resumed. The mother is taught that ill luck will come to the child if the shell be allowed to remain longer. It is therefore a sign to the old people that the law, which separates a nursing mother from her husband during the first year, is being kept.

During the first ten days while the baby is very small it is wrapped in a blanket and placed in the basket-plate, kaitel (Pl. 21, Fig. 2). Afterward it is placed in the basket-cradle (Pl. 21, Fig. 1). The pocket at the bottom of this basket receives absorbent material. The back of the basket is often lined with sweet smelling herbs. The child which is wrapped in a blanket is laced in so that the arms are confined. The legs below the knee are free to kick about. The child spends most of the time in the basket while it is small and is placed in it to sleep and travel until it is about three years old. The child is not weaned until it desists of its own accord or until another child is expected to occupy its place. After receiving its daily bath the child's body is kneaded and pulled into the desired shape.

Children are seldom punished or handled roughly when small. They are thought to be above the natural and likely to disappear, going to the world of immortals if they are ill used.* The boys when quite small were taken in former times to the sweat-house to sleep. They are supplied with slings and toy bows and arrows when large enough to play with them. They are soon able to kill squirrels and birds. They are taught the lore of their people by the father and grandfather at night, and by the grandmother, the great source of wisdom, by day. The girl soon begins to weave little baskets and to tend imaginary babies in miniature baby baskets.

* See Hupa Texts ix.

DAWN OF WOMANHOOD.

While yet a mere child the girl begins to show signs of approaching womanhood. She is carefully watched until the first menses appears. She is then placed under the care of her grandmother or some other female relative. For ten days she undergoes training by day, a dance being celebrated for her at night. She is obliged to get up at early dawn and take a bath. She runs a prescribed course down the river, enters the water to the waist, stoops and throws water twice over one shoulder and then twice over the other, and returns to the house on a run. She looks in at the door with her hands extended, her palms forward. Then she goes half the distance back down the river and bathes again. In a similar manner she goes up the river and returns after the bath, and then half the distance and bathes again. When the bath is completed, she goes for a load of wood.

During the ten days she is not allowed to look up at the world about her nor is she allowed to look any one in the face. She wears a dress of many strands of maple bark (Pl. 9, Fig. 2). These are gathered to a belt at the waist and extend to the knee. She is not allowed to drink water for the ten days, and is given but one meal in the middle of the day. She is careful not to touch her face or hair with her hands. A piece of bone or horn is worn suspended from her neck that it may be at hand for dressing her hair (Pl. 10, Fig. 4). Especial care is taken that she does not use improper language or tell an untruth. It is believed that she will continue untruthful throughout her life if she does. Not all girls are able to endure the physical hardships for the entire period of ten days.

During this time a dance is held each night, beginning with the second. It is known as kinaLdûñ tciLwal, "first menses stick shaking." The dance is held in the pit of the xonta. The girl, covered with a blanket, is placed in the northeast corner. Six men sit about the fire facing it. The first one has on the broad woodpecker head-dress, called meūnasitan. The next has a row of sea-lion teeth around his head, with the close-knitted kiseaqōt (Pl. 7, Fig. 2) hanging down his back. These head-dresses

alternate around the circle. These men hold in their hands curiously shaped flat pieces of wood. The other men wear caps of buckskin with large bunches of trimmed feathers at the top. Long bands of buckskin, painted in designs and terminating in a row of feathers, hang down the back. They carry in their hands sticks, five or more feet long and an inch and a half thick. These sticks are cut from syringa, *Philadelphus Lewisii*. The top is split down about eighteen inches, making a number of parts which are worked down until they have plenty of room to rattle. The stick is painted in rings and has a fringe of bark left at some point.

Holding these sticks the men file in and stand in a close circle around the fire. The girl stands up but is still covered with the blanket. The men sing a song, keeping time with their rattling sticks. When they have finished they march out, and the women, who have been sitting on the banks about the pit, sing songs of their own, tapping the girl with rattle sticks. The men return several times at intervals during the night and sing as at first. At the dance of the tenth night all the men come in. A blanket is held above the girl's head. The men tap this blanket with their sticks, singing a special song. When they have finished they throw their sticks on the blanket and go out. Then for the first time the girl appears. She goes outside. Two women stand with abalone shells held above their heads. One stands to the south and one to the north. The girl takes a strand of the maple bark of which her dress is made and whips her shoulders. As she does this she backs away about twenty paces. She then runs and jumps up, looking into the shell. She is said to look into the celestial world toward the southeast. She repeats the performance toward the north, and is said to look into heaven to the northeast. After this she goes for the final bath, followed by small boys who try to make her look back and spoil the good effects of her ten days of hardship.*

Courtship and Marriage.

The girl who has passed this period of life is called keLtsan, "virgin." Her caretakers in former times spared no pains that

*Some white men have stated that this ceremony has an immoral conclusion, but in this they are certainly mistaken.

she might remain true to the name until her marriage. She was not allowed to be alone with a man either in the house, or out. She was told the results of wrongdoing and severely punished by beating if she were remiss. Her male relatives killed her assailant in case of rape. A seducer was obliged to marry his victim. Sometimes the girl tried to avoid disgrace by inducing miscarriage, often perishing in the attempt. In that case her betrayer, if known, was strangled before the corpse.

Courtship often extended through a summer and a winter. The marriage took place at the beginning of the summer season. The father or some other relative of the young man visited the male relative of the girl who had the right to dispose of her. The subject was broached and a sum of money was exposed to view. This was left with the girl's guardian while the match was being considered. The sum paid varied according to the social standing of the parties and the girl's attainments. She herself might or might not be consulted. After the bargain was completed by the paying of woodpecker scalps and several strings of shell money, varying in total value from $30 to $100, great preparations were made by both parties. Quantities of presents consisting of dresses, weapons, baskets, and food were made ready. When the appointed day came the bride was conducted to her husband by a band of maids and young men from her village. They made the journey in canoes in which were placed the presents. The departure was timed so as to arrive toward night. They had a great feast that night. The party remained for two days. The young women went with the bride to bring wood and the young men accompanied the groom and assisted him in bringing sweat-house wood. On the third day those who accompanied the bride returned, carrying back as many presents bestowed by the groom's family as they had brought.*

If the woman had previously received attentions from a man she was not allowed to speak to him after her marriage. If her husband was not pleasing, she sat on the smoky side of the fire that her tears might be assigned to smoke. She must endure until she learned to love her husband.

*Marriage by purchase is now very reluctantly being abandoned under the pressure of the Government.

Sometimes the man was poor and unable to pay a large sum of treasure for a wife. In this case he might pay half the usual sum and go to the home of the bride, where he served his father-in-law. All offspring of the union belonged to the woman's people.

A man's standing in the world depended on the amount of money which had been paid for his mother at the time of her marriage. If the sum were large he was the peer of any in the tribe. If his mother had been "half bought" he was considered as not well raised. It was not expected that he would be a discreet and truthful man. A child born without the payment of any price was called tintailtcwen, "he was made in the woods." He was a social outcast and usually a slave. He was spoken to as they spoke to their dogs. No money could be exacted for his death or injury. He was not permitted to enter the sacred sweat-house. He could marry only with his kind. His children would be bad and likely to do wrong.

A man might send his wife back to her people for sufficient cause. Among the causes for separations were stinginess, bad temper, and mita LAN, "her mouth big," by which a scold is meant. The man received the money he had paid, if there were no children. If only one child were living, he might get half of his money back. To receive more would leave his child not well raised. The woman was obliged to endure whatever fate had fallen to her lot.

RESTRICTIONS FOR WOMEN.

As soon as a woman found a menstrual period taking place she withdrew to the mintc. She was denied flesh and fish. The vegetable food she cooked for herself in her own baskets in the mintc. She ate and slept there for ten days, or if she could make the proper "medicine," eight days.* This "medicine" consisted in making a pool in the sand by the river for a bathing place. She repeated a long formula and bathed by throwing water on her right shoulder and then on her left, repeating it once, and washed her face. This was done on the evening of the seventh day. The next morning she made a

*Hupa Texts xxxix.

cross on her right arm between the shoulder and the elbow with a burned acorn. After this she was allowed to return to the xonta. For the remaining two days she cooked some of the kitast (leached acorn meal) in a separate basket. After she dropped in the hot stones she took the basket outside that the steam might not render the rest of the family unlucky. A study of the formula used by the woman shows that her body is considered spoiled. The medicine causes her to receive a new body.

DAILY ROUTINE.

At day-break the woman arose and went to the river for a complete bath. She then took the burden basket and brought a load of wood for the xonta fire. She was expected to have finished her bath before the men were astir. They too were early risers. The dawn was looked upon as a maiden. She would say of an early riser, "I like that man, I hope he will live to be old. He always looks at me." The men always took a swim in the river on rising. A light breakfast was eaten by the family in the xonta and each went to his day's task. In the afternoon the old men, and the religiously inclined young men, took a sweat-bath in the taikyūw, followed by a plunge in the river. After the bath they sat in the shelter of the taikyūw and sunned themselves. As they sat there they engaged in meditation and prayer. In the evening the principal meal was served. The men ate very slowly, looking about and talking after each spoonful of soup. The women sat in silence with uncovered heads and hidden feet that they might show great respect to the men. A basket of water was passed after the meal that the men might wash their hands. When they were through they retired to the taikyūw, where they spent several hours in converse.

SOCIAL ORGANIZATION.

A typical family consisted of the man and his sons, the wife or wives of the man, the unmarried and half-married daughters, the wives of the sons, and the grandchildren. To these may be added unmarried or widowed brothers and sisters of the man

and his wife. The women of the first generation are all called by the same term of relationship by the third generation whether they are great aunts or grandmothers. So too the old men of the family were all called grandfathers. All the children born in the same house called each other brothers and sisters whether they were children of the same parents or not. In case of the death of a mother an unmarried sister was expected to take her place, both as the wife of the man and mother of the children.

The next unit above the family in the social order was the village.* These varied greatly in size. Where a man was born there he lived and there he died and was buried. On the other hand, the women went to other villages when they married and usually remained there all their lives. The inhabitants of a village were related to each other, for the most part, on the side of the males. They had other relatives scattered through different villages where their daughters and sisters had married.

Each village had a head-man who was the richest there. His riches consisted in weapons of war and chase, dresses, skins, and dance regalia. Besides he had hunting and fishing rights, and certain lands where his women might gather acorns and berries. The very fact of his wealth gave him the power of a chief and maintained him in that power. The men of the village obeyed him because from him they received food in time of scarcity. If they were involved in any trouble they looked to him to settle the dispute with money. As long as they obeyed, whatever he had was theirs in time of need. His power descended to his son at his death, if his property also so descended. On the other hand any one who by industry or extraordinary abilities had acquired more property might obtain the dignity and power.

The villages south of and including Medildiñ were associated in matters of religion. There was no organization or council. The richest man was the leader in matters of the dances, and in war, if the division were at war as a unit. All to the north of Medildiñ constituted another division. The head-man of the northern division, because of his great wealth, was the head-man for the whole lower Trinity river. He was the leader

*The Hupa are now for the most part scattered through the valley, the villages being occupied by the older people only.

when the tribe, as a tribe, made war. This power was a result of his wealth, and passed with the dissipation of his property after the coming of the whites. He was the leader because he could, with his wealth, terminate hostilities by settling for all those killed by his warriors. There seem to have been no formalities in the government of the village or tribe. Formal councils were unknown, although the chief might, and often did, take the advice of his men in a collected body.

Disagreements were common among the Hupa. They arose more frequently over personal injury or insult than over matters relating to property. The personal property was quite limited in amount. The canoes alone were likely to stray. The law in case of a canoe found cast up on the bank of the river, or rescued as it was floating down, was that it became the property of the finder subject to right of redemption at its actual value by the former owner.

Personal insult or injury is followed by absolute non-intercourse. The Hupa are free in criticising one another to the face, but any statement implying crime or disgrace, any disrespect to dead relatives, or any expression of a desire for ill luck or death is strongly resented. After the first angry encounter the parties do not speak to each other. After a time the aggrieved party goes to some prominent man, usually the head of the village, and puts his case in his hands. This man approaches the other party and suggests a settlement. If there is no difference of opinion in regard to the facts of the case, the sum of money to be paid is fixed by a mutual agreement of the parties concerned effected through the intermediary, or is left to him to decide. In any case, he is responsible for the payment of the sum which he agrees ought to be paid by his client. If there should be a difference in regard to facts, witnesses are called and in case of contradiction made to confront one another. The go-between receives a fee of five or ten dollars for his trouble.

Personal injury and homicide, intentional or accidental, may be settled in this way. After the settlement is accomplished the parties must be friends, even if the one has murdered the other's brother. Settlement, however, may be refused and life for life demanded. In this case the life of the head of the family to which

the offended belonged, or that of any member of it, was sought without regard to the real perpetrator of the crime. If the feud was between villages or tribes, the death of any male member of the village or tribe atoned for the injury. This principle was applied to the whole white race. If a white man killed an Indian, a white man's life was due in return. Wanton killing of Indians by the first white men caused many an innocent white man's death. This small regard for the mere individual and the great regard for the family is a point to be well kept in mind when dealing with or studying Indians.

Accidental injury or the most remote contribution to the result is held as much a grievance as if the act were directly committed with intention. A child was burned to death in a fire a woman had built for heating wash-water out of doors. Although the woman was in no way at fault, the life of her son was sought as a recompense.

AMUSEMENTS.

The Hupa have four games.* One of these very much resembles shinny. The contestants are not individuals but social or ethnic units. Village is pitted against village, or tribe against tribe. The shinny stick (Pl. 19, Fig. 3), called miLkitûkûtc, is about three feet long, or more exactly, the length of the leg of the player. It has a natural turn at the end. Two round sticks about five inches long tied together with a piece of buckskin are used for a ball (Pl. 19, Fig. 4). They are called yademil. A straight course is laid out with a stake at each end. At least six players take their places in pairs, two at the middle and two at the points half way between the middle and the stakes. The pair at the middle have the balls. Those at the other points stand facing each other with interlocked sticks. They are said "to tie" each other. One of the two at the middle of the course takes the two balls in his teeth. Suddenly he drops them and tries to drive them toward his goal by catching the buckskin loop on the end of his stick. If he succeeds he runs after the balls and tries to

* Compare "Certain Gambling Games of the Klamath Indians." George A. Dorsey, Amer. Anthropologist, New Series, Vol. iii, pp. 14–27.

strike them again before he is overtaken. If he is overtaken the next pair of players release one another and start after the balls while the first couple wrestle. The third pair take up the game if the second couple become involved in a wrestling match. The side which succeeds in getting the balls to the stake wins. As the game is described as played in former times, it probably rivaled modern football in roughness.*

Another game depends on chance, provided there is no cheating. Two players sit facing each other while the other members of their respective communities back them with bets, songs, and "medicine". This game, called kiñ (Pl. 19, Fig. 1), is played with bundles of small sticks made from twigs of a shrub, *Holodiscus discolor* var. *ariæfolius*, kinLits. One of these sticks has about an inch of the middle painted black. The dealer shuffles the sticks by revolving the bunch held at an angle against the palm. Holding the sticks behind his back he divides the bundle into two parts, one of which contains the marked stick. His opponent indicates by a motion, after clapping his hands, which hand he will take. The score is kept with counters. A drum made of a box with a cover of leather is usually beaten during the game. This drum, the Indians say, is not aboriginal.

A game used to be played with the vertebrae of salmon strung on a string which is tied to the larger end of a pointed stick (Pl. 19, Fig. 5). The trick is to catch the bones on the stick. The same game is found in Mendocino county where the vertebrae of deer are used instead of those of salmon.

The woman's game is played on the pavement in front of the xonta with four disks of mussel shells (Pl. 19, Fig. 2). Two of these are about an inch in diameter and the other two a little smaller. The shells are dropped from the hands held palm against palm. Two points are counted when all four are down or up, and one point when two are up and two are down. The score is kept with small sticks, all of which are at first in the pool. They must all be won from the pool or from the opponent.

These games are often played during the days and the nights of the celebration of the dances. With these games shooting at a mark held a high place as an amusement.†

* Hupa Texts ii.

† The Hupa make several varieties of cat's cradle.

WAR.

The chief weapon of war was of course the bow and arrow. The bow, while considerably shorter than the warrior, had great power from its sinew back and its broad limbs. Their arrows are hardly to be improved upon. The barbed points of flint and obsidian might pass through a body, but could be withdrawn from the flesh only with great difficulty. It is not known that the Hupa poisoned their arrows, but some of the flint used is said to have been very poisonous in itself. A short arrow-like lance (Pl. 4) was used in hand-to-hand combat and especially to deal a blow to a sleeping enemy. The point was a large blade of obsidian or flint. The shaft was small and not over three feet long. Similar weapons are still carried in the dances. The older men say they were formerly used in warfare. They had, besides, the flint knife with a short handle about two inches long. They also had slings which in the hands of skilled wielders were no doubt effective.

For defense they made waistcoats of split rods of meadow sweet, *Holodiscus discolor* var. *ariæfolius*, placed vertically and bound together with a woof of native twine. These breastplates were made with great labor, and seem not to have been common. They had also coats of elk hide. Sometimes these were double. The warrior clad in one dodged the arrows sidewise that the arrows might glance off, and not by bobbing up and down as the unprotected man did. A man so protected led the assault with great apparent courage, producing panic among the enemy. Head-dresses of elk or panther hide were worn.* Perhaps they gave some protection, but they also exaggerated the height of the man and inspired dread. The bunches of long hair were usually pinned on top of the head before entering action.

Some sort of a dance was held before setting out on an expedition and at times just before they went into action. This consisted partly of yelling and a discharge of weapons. A dance was also held over the trophies after a victory. Scalps were not taken. Some California tribes took the whole head as a trophy, but there is no evidence that the Hupa did so.

*For illustrations of these pieces of armor see Prof. Mason's article in Smithsonian Report, 1886, Part 1, plates vii and xxiv.

Medicine making was largely resorted to in warfare as in all other serious undertakings of the Hupa. Certain songs were believed to put the enemy into sound slumber when a night attack was to be made. War parties were no doubt led by the brave warriors, but the dispatching of such a party was done by the chief man of the village, division, or tribe, for it was only by his wealth that settlement could be made and peace established again. It is not probable that wars were very frequent. There were no cattle or horses to steal. There seems to be no good reason for thinking that the Hupa excelled their neighbors in war. Stephen Powers' information no doubt came from the soldiers and other white people residing in the vicinity.* They naturally preferred a worthy foe. Most of the surrounding tribes resisted the inroads of the white man more determinedly.

DISEASES AND THEIR CURES.

ORIGIN OF DISEASE.

The primitive minds of the Hupa were able to connect the death of a man with the wound inflicted by an arrow or a knife in the hand of an enemy, but they were unable to account for sickness or death when they occurred without violence. The effect was often looked upon as the cause. In many cases it was thought that some invisible foe had wrought the mischief or that some man had used invisible weapons. Pain was looked upon as a substance, something which had become lodged in the body and must be removed.

A cold in the head is called xoniñkitō xōLwe, "his head its fluid fights with him." If the cold is on the lungs it is said xos xōLwe, "phlegm fights with him." In both these cases the discharge, the result of the disorder, is looked upon as the malignant cause. When the foot becomes swollen they say xōxakitdiLwe, "his foot something fights with it." Of heart trouble they say xoikyûñsaan kitditan, "his heart something eats." In these cases the cause is not known, but the conception is that of something carrying on warfare.

* Contributions to North American Ethnology, Vol. iii, p. 72.

Lame back is called kitdindai xōLwe, "kitdindai fights with him." Kitdindai is a flake of flint or obsidian seen on the mountains. There is a belief that these flakes travel of their own accord. The deer are thought to play with them. If one touches one of these stones he will be afflicted with a lame back. The name for pneumonia is kiLwe xōLwe, "kiLwe fights with him." KiLwe are thought to be little beings resembling men. They are believed to live in water, especially in lakes and streams in out-of-the-way places. Boys are told not to throw stones into the water or they will bring this disease upon themselves. Medicine is made for little children before they are taken into the mountains.* If the medicine is not made they say the kiLwe will not know the child and will injure him. There are many malignant beings which are thought to inhabit remote and wild parts of the country.

A person who throws up green substances or blood is thought to have offended the spirit which dwells at the rain rock in Sugar Bowl valley. There are many laws which are to be kept lest their breaking bring the displeasure of some divinity, and sickness follow as a punishment. The most dreaded cause of disease was and is still thought to be human beings possessed of supernatural power. These people are called kitdōñxoi. They are thought to possess some material object which gives them this evil power. There are several kinds of objects which are said to be used. One is said to consist of a rib from a human being which has been fashioned into a bow. This is provided with a bowstring from the sinews of a human wrist. After repeating the prescribed formula the manipulator is thought to shoot a mystic arrow which causes death. One who possesses such an instrument can turn himself into a bear or a wolf and so pass unknown. He is able to run at great speed by pressing the instrument to his breast. These people are thought to travel at night. They approach the dwelling and allure their victim outside or go in as a guest. It is only necessary that the victim be seen or that he reply so that his voice be recognized. When camping in the open a man builds a fire, but sits far back in the shadow to avoid being seen by one of these people who are

* Hupa Texts xxxvii.

expected in the most out-of-the-way places. After the burial of a victim, the one who caused the death goes to the grave and carries away the clothing and utensils which have been placed on the grave. In this way he is thought to get back the power lost in inflicting the injury.*

Owners of these instruments are looked upon as the worst of men. They are said to lose all natural affection and to put to death members of their families for a paltry sum. They bring disease and death upon their families by daily associating and eating with them. Those suspected of being kitdōñxoi used to be tried by the shamans and put to death, if found guilty; or they were shot from ambush by some relative of a victim, and the burden of proof was thrown upon his relatives when payment was demanded for his death.

SHAMANS AND MEDICINE-MEN.

For the diagnosing and treating of diseases there are professional shamans, who practice their art after a season of training. There are two classes of these: the dancing doctor, tintatcinwûnawa, who determines the disease, its cause, and the steps necessary for recovery; and the sucking doctor, kitētau, who removes the pain by sucking the part affected.† Besides these are many who know medicine formulas, kīmaūtciLtcwe, "medicine makers," and give treatment when called upon.

A candidate who wishes to become a professional shaman must spend several months, and sometimes a year, under the direction of some old shaman. The candidate is not permitted to drink water, and his food is confined to the vegetable kingdom, being mostly acorn soup, which supplies the liquid absolutely essential. Much bathing is prescribed. At night a dance is held in the sweat-house. The candidate dances around the fire as many times as possible. This is continued until the prospective dance doctor gets the desired clairvoyance, or the sucking doctor gets the "pain" in his mouth. During the nightly dance the candidate makes the motion of catching the

* Hupa Texts, vii.

† The division into classes is not strict. Often the sucking doctor also dances and sings, but there are dancing doctors who never suck.

pain and putting it into his mouth. Sometimes the desired power is long in coming. The candidate goes in that case to a high mountain and dances in the rarer air. Tobacco is smoked in large quantities. It is said that when the candidate is a woman and has become too weak to dance, the husband takes her on his back and dances with her. Such a man wins great merit and will have extraordinary good luck.

When the person is ready to practice the first thing is the fee. That must be paid in advance. Usually a string of dentalia and a deer-skin blanket were given. Now ten dollars in gold is sometimes paid. The fee must be returned if the patient dies within a year. The dance doctor paints himself and puts on feathers. He dances by the patient, sometimes using a rattle made of the hoofs of the deer (Pl. 18, Fig. 3). After dancing he tells what is the ailment of the patient and to whom he is to apply for aid. It is said that in olden times the doctor did not report until he had slept. He saw in his dreams the cause of the trouble. Now-a-days the doctor pretends to see through the patient, or to see the act in the past that brought on the sickness. They also discover lost articles and give other such information. For the cure they sometimes direct that a sucking doctor be called in, sometimes they say the services of a certain medicine maker are required, and sometimes, but quite rarely, advise that a white doctor be consulted. The sucking doctor applies his lips to the part affected and sucks with great power acquired by practice. After the sucking he vomits, continuing to bring up secretions until he produces the required "pain", probably in the form of coagulated matter.

The herb doctor may know one or many medicine formulas, learned from a parent or other relative. These medicines are not confined at all to remedies for bodily ailments. There are medicines for the mother at childbirth, for the baby, for crossing the river when it is high, for hunting, for fishing, for basket-making, for gambling with each game, for love making, in short, to ward off every evil and to win every blessing. In all the medicine-making the procedure is the same. The doctor searches for the herb or tree without drinking water for the day. When the plant is found a formula is repeated. This recounts

a case in the first times which was exceedingly serious, the search for the medicine, the speedy recovery, the declaration of the belief that this misfortune had been suffered that Indians when they came to live in the world might have a remedy for similar ills, and the statement that whenever this remedy is used the originator's deeds shall be spoken of. A prayer for the medicine is then addressed to the inventor of the cure. The answer to the prayer is repeated by the doctor in another tone of voice. The medicine is then applied internally or externally, direct or by steaming. In very few cases is the remedy applied in a way which could really relieve the ailment. Some herbs of undoubted medicinal value are used; but in most cases these are strong-scented plants and seem to be used to attract the attention or sway the will of the person to be influenced, whether man or spirit.

The Brush dance is a medicine dance.* It is conducted by any one who knows the formula and has been hired by the family of the person for whom it is held. This person may have some chronic trouble, or be delicate in constitution, or the parents may have lost several children previously and wish to safeguard their child by the ceremony.

The doctor conducting this dance might be a man, but at present only one old woman knows the medicine, and she therefore is employed. She rises at dawn on the chosen day. She goes to the south side of her xonta and makes the usual call employed in medicine-making. This consists of a series of knocks on the wall and "ha, ha" uttered several times. She then goes to the north side of the house and calls again. Then she calls on the west side. This she says is to give notice to the people of the under-world that they must give back the spirit of the patient. She paints her face black and makes black stripes on her arms at the wrists and below the shoulders, and on her legs at her ankles and thighs. She also paints her breast. She ties her hair with the best fur ribbons and wears a good dress. A virgin accompanies her in her search of the medicine. They both refrain from food and water for the day. They find a yellow pine, *Pinus ponderosa*, diltcwag, and take the bark for

* Hupa Texts xxvi.

medicine with which to bathe the patient. A quantity of pitch wood from the Douglas spruce, *Pseudotsuga taxifolia*, neskin, is secured. This is heated over a fire ceremonially built. The woman erects four forked sticks, one at each corner, and lays poles in the crotches. On these poles the wood is laid to cook. The fire is built after stones have been placed at each of the four corners with mûxatcexōlen on them and a stick of the pitch wood running from them to the fire. The long medicine formula is repeated. When the wood is sufficiently dry it is nicely arranged and tied up. The doctor and the girl remain in the woods until night. Then they come to the xonta where the ceremony is to be held. Early in the evening the people come together. The women and children find a place to observe the dance on the banks of earth surrounding the pit of the xonta. The doctor pounds the pine bark in a basket-mill and boils it in the basket-pot. As she pounds she sings the appointed songs. The child lies with its mother by the fire. The doctor stands at the feet and the girl at the head. They each take one of the pine sticks, light it, and wave it over the child. After doing this for some time the doctor takes her place by the fire and repeats prayers while burning the incense root.

The dancers then come in from the outside each having a bunch of brush. They take their places in a circle around the fire. The leader sings a song in which the others join. The dancers lock arms and dance with the right foot, keeping their bodies bent toward the fire. As they dance they move slowly around toward the right. The bundle of brush is held in front of the face. Occasional stops are made to rest. After three songs have been sung the brush is laid aside and what the Indians call a "light" (quick) song is sung. The dancers in the meantime have made one or more circuits of the room. They then march out and a recess is taken. Others or the same ones come in for a second dance which differs from the first only in the songs. The dancing is kept up until nearly morning. Those who wish remain for breakfast. All rest the next day and night. On the third day the doctor and girl go again to seek the medicine and all happens as before except that many more attend the dance on that night. To accomodate the spectators the roof and

walls of the xonta are removed. The dancers are divided into parties who compete with each other in the singing. Those from the Medildiñ division compete with the TakimiLdiñ men and often a third band is composed of visitors from the Klamath river. Of the women only the keLtsan (virgins) are allowed to dance.

Toward morning the dancers put on the Indian finery consisting of roll-woodpecker hats, feathers, etc. There seem to be no prescribed regalia. Instead of the brush each dancer has a beautiful quiver of fisher-skin (Pl. 4). This is filled with arrows and a highly decorated bow. The quiver, instead of the brush, is held in front of the face while dancing. The women wear fine basket-hats and shells. One of the dancers steps within the line with a whistle made from the leg of a crane (Pl. 18, Fig. 4). This he holds in his mouth while he dances backward through an arc of one hundred and twenty degrees on the inside of the circle of dancers. In one of the last dances a young man and his sister, who must be a keLtsan, take baskets containing the medicine and dance while holding them above their heads. They advance and recede from one another in a most graceful manner, passing only a third of the distance around the fire inside of the regular line.

The child is bathed with the medicine and a little is placed in its mouth. The doctor has four songs. She sings the last of these toward morning as she dances with the medicine held above her head. The favorite singers are often encored. The songs sometimes contain words of no especial importance. Some of the songs are old, while others are improvised for the occasion. The dancing continues until sunrise. The visitors and many others remain to a feast which is served at the expense of the child's father.

BURIAL CUSTOMS.*

When a Hupa had died a great wailing commenced. It was the duty of the nearest male relative to care for the body and to dig the grave. This was considered the greatest favor one could do for another. The corpse was laid out on a board and tied down. The

*Many of these customs are still observed, especially by the more conservative of the Hupa.

body rests with its head always to the south on the back side of the fire, opposite the door, the place of honor. The measure of the body was taken with a stick cut from the elder. The grave was dug near the village, no care being exercised to avoid an older grave provided the occupant had been forgotten. A small fire was first built beside the chosen place, then the grave-digger broke the ground with a stick and threw out the dirt in a basket. The grave was made deep enough to bring the surface of the ground half way between the knee and the hip of the digger. After the grave was dug a little white sand was brought in a basket from the river and sprinkled in the grave. The body was taken from the house feet first, not through the door, that was the passage for living men, but through the wall of the side nearest the door where planks were easily removed. The body was placed by the graveside to be made ready for the burial. The grave-digger washed the face and breast of the corpse and then with a sharp stick made a hole through the septum of the nose and the lobe of each ear. Two pieces of dentalia were inserted in each perforation with the tip of the first thrust into the base of the second. The only reason given for this is that it was so done at the first burial.

When the body had been made ready, some one stood at the feet and addressed the corpse saying, "Don't be lonesome for what you have left. While you were living your time came. May it be well with the people where you used to live." This is to prevent the ghost's return and consequent misfortune from falling again on the family. If the deceased was a husband, the widow might step between his legs and thus release herself from her marriage vow. Otherwise she was bound for life, and infidelity to the dead would bring ill luck.

The body was lowered to its last resting place with strands of grapevine. Three men assisted the grave-digger in this task. When the ropes were withdrawn, one of these helpers took them, wiped himself with them and passed them to the next; the last one gave them to the grave-digger saying, "I give it back to you," so freeing himself and his fellows from the contamination of having assisted in the burial. In the grave with the corpse were put his clothing, weapons, and other

property. If he were an important man or well connected, large quantities of money and dance regalia were buried with him. Everything was first destroyed by breaking. They say this was done to prevent grave robbing. When the grave had been filled a stone was laid on top at each end and a board laid on them. On this board were placed the dishes and utensils used in every-day life. Four large burden baskets were placed bottom up, one at each corner of the grave. Holes were burned in the bottoms of these baskets and stakes driven through them. Even before the coming of white people a fence is said to have been built for people of note.* In other cases a bundle of poles was laid over the grave and tied down to stakes, presumably to keep animals from digging into the grave. Now fences are built for all. Usually the corner posts and palings are ornamented by cutting the tops into diamond-shaped points and the whole is painted. Poles are laid across the grave resting on the fence. On these are hung clothes which have been rendered useless to the living by tearing them into strips. All these objects accompany the spirit to the under-world. There the spirit presents the appearance throughout all time of the corpse when it was buried, hence the importance of dressing it properly.

During the whole ceremony loud wailing is indulged in not only by the female relatives but by others in attendance. The others are not hired, as might be supposed, but take this opportunity to wail for their own dead expecting that this fact will be reported to them by the departing spirit.

The grave-digger with all the household retire after the burial to the sweat-house, which all enter naked. A priest hired for the purpose sits facing a corner post, with his back to the company, and begins to repeat the formula of purification over a basket of medicine. There are several of these formulas. One of them† recites the first death and burial, the fear of the other people for the father who had buried his dead, and the father's search for medicine which would restore his body. In another‡ the priest calls at place after place for help, beginning at Xaslindiñ, south of the valley, and mentally pursuing the journey

*Gibbs, Schoolcraft, Vol. iii, p. 140.
†Hupa Texts li. ‡Hupa Texts l.

without success until he reaches the ocean at the mouth of the Klamath. At each place not only is the cry for help repeated, but the reply of the spirit is given in a changed tone of voice. At each place an offering of tobacco and powdered incense root, *Leptotænia Californica*, is blown from the hand as an offering to the divinity. Whichever formula is used the whole journey is not completed on the first day. After the formula has been intoned in a voice so low and obscure that those in the room are unable to distinguish the words and so learn the precious "medicine," the priest pounds the herb with a stone pestle and boils it in water with hot stones from the fire. This fire is ceremonially built by the priest. He places sticks of tsēLitsō, *Ceanothus integerrimus*, from each corner of the fire-place toward the center. A little tobacco and incense root are also placed at the corners. When the fire has been kindled the sticks and offering of tobacco and incense root are placed on it.

The priest puts the medicine into basket-bowls and applies it to the persons to be purified. He puts it on their heads, arms, and legs, saying, "This will make your body new, you will have good luck again when you hunt or fish or gamble." The man who has dug the grave rubs the palms of his hands and the soles of his feet because they have handled the corpse and trodden on the grave. When this is completed they all go to the river-side and wash again with the medicine; then they plunge in and bathe in the river. After the bath they dress and go to the xonta. The grave-digger has a cane of tsēLitsō, *Ceanothus integerrimus*, and the incense root in his hand. He builds a fire for himself in the xonta and lies by it in silence. He keeps the cane by him and the root in his hand. A woman cooks and serves the food for him separate from the rest. Each night the man goes to the graveside, carrying a bough of Douglas spruce over his head that he may not by any chance glance at the sky or at any human being thereby contaminating them. At the grave-side he kindles a fire from a brand brought from his fire in the xonta and watches by the grave. When he returns to the xonta to sleep, he puts the cane and the incense root under his head that he may not dream of the dead and bring worse luck on his family. Early on the next morning medicine is made as on the first day.

On the third day none is made, for on that day the first one to do this rested. On the fourth day the formula is repeated complete from beginning to end. On the fifth and last day the medicine is not made in the sweat-house. The grave-digger takes all his clothes and the dishes which he has used during the ceremony and either hides them in the woods or throws them into the river. The coals of the fire are buried. The baskets and utensils used by the priest are given to him and he must take them away. All assemble at the riverside and are washed with the medicine for the last time and take a bath. After this the priest gives each medicine made of *Osmorrhiza nuda* (?), kimaūLûkau, "medicine fat." This gives them a new stomach, and they can eat venison and salmon, which had been forbidden them during the five days. The grave-digger can now go among his fellows. He is free from his pollution.

As soon as the burial is completed the nearer relatives cut their hair as a sign of mourning. The widow has hers cut quite short, and wears it so as long as she lives or until she marries again. All the members of the household wear several strands of braided grass, *Xerophyllum tenax*, around their necks. These are never removed. They are worn to prevent the wearer from dreaming of the dead. The spirit takes five days for the journey to the under-world. During that time it lingers, and on the first and fifth day attempts to enter its former home. On those days a basket-mill, kiist (Pl. 24, Fig. 1), is hung in the doorway to prevent its entrance. If once it gains admittance it remains and causes other deaths. In this case the house is burned. In some cases the house is said to be burned as a mark of respect. The modern houses are nearly always vacated for a time at least.

When the burial is over the person may not be referred to in the presence of a relative except to make the settlement required before a dance. The name of the person cannot be spoken without offense, even when it is thought of in its common application as the name of an animal or object and not as the name of a person. A man of some note was called xa, "goose." After his death the word was avoided by saying Lekontcditetile, "the one that likes salt." This name has established itself as the name of the wild goose, the younger people knowing no other. There are

several other known examples of such creations. There is a story of a time when so many words were tied up by wholesale deaths that it was necessary to abrogate the law for the one time and take back the discarded words.

The speaking of the name of a dead relative or any reference to the relative was an insult to be avenged, unless settlement was made by money in the usual way. If a relative wished to refer to the departed there were prescribed phrases to be used. The father spoke of "the wind which blows against my breast." The son referred to a dead parent by saying, "the one I resemble." The phrases were understood by the hearer, who, if he replied, did so in guarded language.

The home of the dead is in the under-world toward the west. The trail is broad from much use and leads directly down. Some way on the journey is a house at a place called nintselnewan, "red earth." A family lives there. Thus far the spirit may go when a person is in a trance or a faint and return again. He who passes beyond never comes back. From this place a very dim trail leads to the world of the Kīxûnai in the sky to the southeast. Only the shamans and singers of the dances travel that trail. All others without regard to their good or evil deeds go on to the under-world. The road leads to a river where there is a fish weir with guardian water gods at either end. There is a split canoe for the crossing of the spirits. Beyond are the houses of the departed. Life in that world is not to be desired. The spirits live on dead salmon and other unfit food. They are much given to brawls and fights. Dampness and darkness reign there. A story is told of one man who did succeed in following a much beloved wife, escaping the guarding gods by causing them to sleep with powerful medicine. He brought back his wife, but she was no longer able to enjoy the world of light.

RELIGION.

Deities.

The chief divinity of the Hupa is called Yīmantūwiñyai, "The one who is lost across the ocean," or Yīmankyūwiñxoiyan, "Old man over across." Hupa mythology is very inconsistent when

taken as a whole, for not only did each village have its own versions, but each family had myths which, being seldom told outside of the family, came to differ from those told in the same village. One commonly accepted version* states that when the world was unshaped and barren of life, smoke appeared on the mountains as an indication that something was to transpire. Then Yīmantūwiñyai came into being in the earthen wall back of the fire in a xonta which had sprung up to shelter him. This happened at a place below Martin's Ferry on the Klamath river. When he had grown to manhood in a miraculously short time, he started to travel over the world. He sought other beings and found them at Orleans Bar on the Klamath and in the sacred house at the Takimiłdiñ on the Trinity. They had come into spontaneous being as Yīmantūwiñyai had done. These beings were the first of the Kīxûnai, over whom Yīmantūwiñyai was chief.

In his journeys he established riffles in the rivers, and hills and mountains or level spots on the land, according to his pleasure. In several cases it is told that his reception by the maidens guided him in this matter. At some places he was rebuffed and in anger took away the favorable places he had arranged for a village.

There was no food for the people, and he went to seek it. He found beings who had the deer, the salmon, and the eels held in pound for their own use. These he let loose by craft. He visited these selfish people and as a guest discovered the hiding place of the deer or salmon and, after throwing the keepers off their guard, tore away the walls. Again he journeyed, finding along the trails blind monsters who had various means of ensnaring travelers whom they consumed for food. Yīmantūwiñyai either killed them or transformed them into harmless beings.

It is generally told that he settled after this at Łeldiñ (Southfork) where he ruled the Kīxûnai as chief.† He had two wives who had each borne him a child, one a boy and the other a girl. After a time he went to the end of the world

* Hupa Texts I.

† Hupa Texts II.

toward the south. There he became enamored of a beautiful maiden. He remained with her and had a son born from her. His wives at Leldiñ became jealous and buried his children alive. They came out again and were again buried until they remained in the ground. This was the first case of death. Before this time people had grown old, but had renewed their youth by sleeping in the sweat-house. The people were frightened and fled down the river to avoid the contamination. Yîmantûwiñyai came back with his latest born in his pocket, punished his jealous wives, and followed his people. They refused to let him join them, but finally received the son. They departed from the mouth of the Klamath across the ocean toward the north.

Another version* says that smoke appeared on the mountains and that the Kîxûnai knew the Indians were to come into existence. They feared the contamination of mortals and fled. Yîmantûwiñyai remained and made another journey, finding medicines for men and teaching the proper things for food, etc. At last he started to survey the world that he might decide whether it would do for men to live one or many lives on earth. He feared over-population unless the world proved to be large. He had nearly completed the work when he was entrapped by a beautiful woman and taken across the ocean to join the Kîxûnai, where he is still chief.

Another divinity is called Yîdetûwiñyai, "The one lost from us to the north." There are some of the Hupa who claim he is the same as Yîmantûwiñyai. An account of his birth is given in a medicine formula.† This is of great interest. The sun and the earth alone had existence. The sun sought a wife and found none but the earth. She gave birth to twins. One of these became the solid ground upon which we live, and the other became Yîdetûwiñyai. After living in this world for some time he saw the smoke signal and knew that Indians would soon come into being. He was afraid, and poking sticks under his house went away with it toward the north. There he is lost from mortals. He has ten dances of his own. There is a belief that he comes through the valley every evening and collects the dance

* Hupa Texts xviii.

† Hupa Texts xlviii.

regalia from the Indian's houses and takes them in his boat to his home. In the morning the things return of their own accord. If a young man wishes to become rich in dance property he makes his prayer to this god.

Yĭnûkatsisdai, "In the south he lives," is the name of the god who controls the vegetable world. The story of his origin* says that a virtuous young woman living at Orleans found him as a babe in a hollow tree. She kept him carefully guarded in her house for a long time. One day when she was gone another maiden, who had become curious, entered and found him. She became enamored and stole the boy, escaping with him by boat down the Klamath. The foster mother climbed a mountain near her home and looking toward the west saw the boat near Trinidad. She threw a great stone pestle at them. The missile missed the mark but became a rock near Big Lagoon.

Other traditions concerning him say that he made all the trees and plants which furnish food for men. In a fit of jealousy he is said to have destroyed a large flint rock opposite Takimilding and changed the fragments into common stone. At one time the people were all bad and he caused the ocean to rise and drown all the people. He is supposed to spend much time among the people, passing unseen. Very good people do sometimes catch a glimpse of him. He is said to be the size of a six-year-old boy, but has a long beard. He carries a burden basket or a large sack on his back. This is filled with acorns and other vegetable food. He throws out from his store as much as he wishes to grow the next season. If he sees the food being wasted he withholds the supply and produces a famine. The crows are then said to go to his home in the south and revile him for his stinginess. Some say that they throw him out of his house. He then gives the food, which has been withheld, in such bountiful quantities that acorns are found even under the pines.

These three gods have their homes beyond the bounds of the known world. There are other divinities who dwell in some mountain, near some rock, or in the river at some riffle. Chief among these are the Tans, the deer-tending gods. Each has his definite abode; one lives near Mud Springs,

* Hupa Texts iv.

eight miles east of the valley, another has his home on Bald Hill, and others on the principal ridges. They tend the deer on their special ranges. They are inclined to be stingy and hostile to strangers. When they wish they confine the deer inside the hills. When one of them sees a campfire on his territory he sends messengers to see who it may be and whether they are friends or strangers. A spider that comes down on a web and then goes back is thought to be the spy of a Tan. Small birds circling about are also his servants. To gain his favor, it is customary to spend the first night of a hunting expedition singing songs and making prayers to him. If he is pleased he will send out deer which will stand still to be shot. Should he take a dislike to a man, he will not only withhold the game, but he will cause the hunter to become lost or even destroy him. He watches carefully to see that the deer he does permit to be killed are properly treated. It is believed that the deer's ghost tells his master that at such a house he was well treated and that he would like to go back again. This good treatment consists in the observance of all the many laws concerning the dressing, serving, and eating of the deer and also the disposal of the bones.

Feasts.

South of the main valley in a smaller valley called the Sugar Bowl is a famous fishing place for salmon. Here dwell two divinities* who watch over the salmon; a third brother lives at the south end of the valley proper. He takes out any salmon which, if it had passed up, would have been caught and eaten by a person with a "bad body". "Bad persons" are those who have lost relatives recently, a woman who has suffered miscarriage, a woman who has recently given birth to a child, and a woman who within ten days has had her menses.

It used to be the custom every year for some one of the Medildiñ division to go to this fishing place in the spring before anyone had caught a salmon and make medicine over the first salmon. This was done to secure an abundance of good salmon for the year and to so bless food of all kinds that man, bird, and beast

*Hupa Texts xxviii.

might be satisfied with a small quantity. When the salmon has been caught a long formula is repeated. This recites the making of the first salmon by one of the brothers, a journey with the salmon down the river, around the ocean, and back up the river to the starting place. It tells of the killing, cooking, and eating of the first salmon and sets forth all the laws to be observed in connection with fishing and salmon. The priest puts incense root in the fire and prays for plenty of salmon. He cuts the salmon in a ceremonial manner, cooks it in the fire, and eats it. The people of the southern division used to go to the place in holiday attire, shooting at marks along the trail as they went. When there, they partook of a feast. The priest who makes the medicine must go without water for ten days after. He eats food prepared by a woman who does nothing else. The meal is eaten when the sun reaches a certain mark in the house. If it is not eaten at that time it is omitted for the day. The man brings sweat-house wood every day. He sleeps with the incense root under his head that he may not dream, for whatever he dreams will happen. Every night he makes the prayer for plenty of salmon.

Medicine for the first eel* is made at the northern end of the valley by some man of the TakimiLdiñ division. The observances are nearly the same as those for salmon.

At the fishing place in Sugar Bowl valley is a boulder not over four feet in diameter and not at all conspicuous. This is called by white people the rain-rock. The Hupa call it mī or kenūxoitse, "Thunder's Rock." By this rock dwells a spirit who sends frost when he is displeased, prolongs the rainy season, and brings on drought. When hard frosts or unusual sickness occur it is thought some one mourning the loss of a relative has passed by on the road above and displeased the mī. Some one of the Medildiñ division who knows the "medicine" gives notice of a feast. All are expected to attend, although few do so now-a-days. They leave their homes in the morning without breaking their fast and collect at the southern end of the valley. Just north of Campbell creek above the road they build a fire on a rock. On top of the mountain where the wagon road crosses a mining ditch they build a second fire. By the rain-rock the last fire is

*Hupa Texts xxvii.

built. The food for the feast is cooked over this fire and all the remains of the feast are burned in it. The priest makes a prayer for warm winds and gentle rain to melt the frost, while sprinkling the rock with water in which incense root has been put.* If cessation of undue rain is wished the root is sprinkled on the rock dry. The one who has offended is expected to attend and make public apology for his wrong-doing in passing near the god's dwelling in such unholy condition.

There are many venerated stones on the east bank of the river between Tsewenaldiñ and TakimiLdiñ. Some of these stand in rows, while others lie scattered about. They are called Tcexōl-tcwe, "story people." One account says they were placed there by the TakimiLdiñ man who went to the home of the Kīxûnai and established the Jumping Dance and the acorn feast on his return.† He placed them there that they might conform to the arrangement in the world of the Kīxûnai. They are to watch the acorn feast. When frosts come in the fall some one from the TakimiLdiñ division, a man or a virgin, takes a basket of water with incense root and washes all these stones, praying, as he does it, that gentle rain may come and that the frost may go away.‡ The Chinese miners made a ditch beside these stones and removed some of them. One of these, the Indians say, looked like a woman with a baby on her lap. They add that the Chinaman bled to death soon after he removed this stone.

The name of one of the Hupa villages is TakimiLdiñ, "Place of acorn feast." This feast is said to have been established by the man of this village who gave the directions for the Jumping Dance. It is held in the fall, as soon as the acorns begin to fall freely. No one belonging to the TakimiLdiñ division is allowed to eat acorns of the new year's growth until this feast is held.

While four or six women pound acorns the priest paints his arms and face with a coal of the incense root mixed with the marrow from the lower bone of the fore-leg of a deer. He puts the skin of a mink around his head, takes the sacred pipe from its hiding place and puts it in a kaitel (plate of open work) with incense root, covers his head with a deer-skin, and goes about

* Hupa Texts xxix.

† Hupa Texts xix and xxi.

‡ Hupa Texts xxiii.

three hundred yards from the village to the place of the feast on the river bank. The assembled people all hide as he passes lest they see his face, for he is impersonating Yînûkatsisdai.* The women go to the river and prepare the acorn meal in the usual manner. The fire for heating the water for the leaching has been previously built by the priest. When they are through they carry the meal and brands from the fire to priest, who has been sitting at the feasting place. The priest receives the brands and starts the fire with one stick of madroña and one of tan-bark oak. The priest then lays his blanket on the basket-plate and goes to the river for the bath. He picks up a few stones and throws them in the river, saying: "May as many salmon jump out of the river this fall." All the other men do the same and then take a bath. The women wash their faces only. When the mush is cooked all gather around in a circle, sitting on stones which are never removed. The feast, which consists of acorn soup and salmon, is then eaten. Whatever remains is burned by the priest, who makes a prayer,† asking that everything may grow well on the earth which used to grow on it, that birds and squirrels may not like the food, and that whoever eats, if only a little, may feel satisfied. The stones which were used in cooking the acorns are left by the fire until the time of the next feast, when the priest puts them on the pile. This pile has been accumulating in this way ever since the feast has been held there. The heap is now seventeen feet long, six feet wide, and twenty-three inches high (Pl. 28). The number of stones used varies with the amount of mush cooked. The man who served as priest for many years thought about fifty were used on an average. He spoke also of a burden basketful as near the yearly bulk added.‡

DANCES.

Besides the three dances mentioned elsewhere there are three greater dances. The other dances are held at night for the benefit of some individual. The three greater dances are held in the

* Supra, p. 77.

† Hupa Texts xxii.

‡ There is a tradition that the river one time swept the mound away.

daytime (except the first part of one) and they are for the benefit of the community. The first to be held each year was the xaitcitdilya, "winter dance." It seems to have been celebrated in late spring, perhaps at the end of the rainy season. It was last held in 1899, and had not been held before for about twelve years. For the first ten days the dance is in the xonta nikyaō (sacred house) at TakimiLdiñ. In the afternoon before the dance begins, the priest goes with a keLtsan to the mountain opposite TakimiLdiñ and peels bark from the Douglas spruce, *Pseudotsuga taxifolia*. He then repeats the formula of the dance.* At dusk they return to the village with the bark gathered. Only the well-born members of the tribe are allowed to enter xonta nikyaō where the dance is held. Wishes made in this house are believed to come true. An illegitimate person is thought more likely to make evil wishes. The dancers are said to wear no clothing. They form a circle about the fire, each holding the one in front by the shoulders. Ten songs are sung each night. Toward morning during the last five nights of the ceremony, a large block of wood is placed in the center of the fire and the bark is placed around it. This makes a very hot fire. The dancing becomes a feat of endurance. After the dance in the house is completed a dance, exactly like the Jumping Dance held at TakimiLdiñ in the fall, is danced at Miskût for ten days.†

The object of this dance is made plain by the creation myth† and by the formula repeated by the priest while gathering the bark. The creation myth tells of a large cloud appearing to the east over TakimiLdiñ. This was known to be pestilence. Yīmantūwiñyai advised that a dance be held. After each dance and song they saw that the cloud had gone back a little. After two periods of five days it had entirely disappeared. They then went to Miskût and danced the Jumping Dance at a place selected by Yīmantūwiñyai. The formula describes this first dance and says after each dance, "That sickness is afraid, it goes back."

The White Deer-skin Dance (Pl.30), xonsiLtcitdilya, "summer dance," also called xûñkatcitdilya, "along the river dance," is held in August or September. The Indians say it was formerly

* Hupa Texts xxiv.
† Hupa Texts i.

held every year. Until 1897 it had been held for some time biennially. It has now been discontinued and may never be celebrated again. The dancers set out from TakimiLdiñ with the dancing stuff in canoes. (See Map.) They go up the river to Xōwûñkût, above and across the river from Medildiñ. Here they dance on the afternoon of their arrival and the next morning. They then go by boat to Tsemeta just below the mouth of Hostler creek. Here they dance one afternoon and one morning. In the afternoon they enter the canoes dressed for the dance, and dance the boat dance as they float down, landing opposite Miskût. They dance on the shore that evening and the next morning, moving down to Tselûndiñ (near Norton Campbell's) in the afternoon. They dance here one afternoon and one morning and then go up the river, landing across from Tceendeqōtdiñ. Gambling is the especial feature at this place. The next day they move to the foot of the valley under Bald Hill where they dance one evening and one morning. They then leave the river and go up Bald Hill to NiLtûkalai, "among the black oak tops". They dance that afternoon. The next day they stand in line facing the southwest and dance the final dance, which is witnessed not only by the Indians who have assembled from neighboring tribes, but by the Kīxûnai as well, who stop their own dance in the world beyond the sea to watch that of mortals.*

For this dance there are three sets of costumes. The singer who stands in the center of the line has a head-band called yikaxanatūwil. This is made by arranging rows of hair from some animal so that they project up and down from a middle band of painted buckskin. An open net of twine (Pl. 7, Fig. 1) passes over the crown of the head terminating in a row of feathers reaching to the shoulders. A feather dart is inserted in the hair behind. Many strings of shell beads are worn around the neck. Girded about the waist is an apron made of the skins of small animals joined together with the tails hanging in front. The other dancers in the line have similar head-bands. They wear no nets on the back of the head. About the body they wear girded a deer-skin robe with the hair turned in. The carriers of the sacred obsidian knives have head-dresses consisting of eight or

*Hupa Texts xv, xvi, and xvii.

nine sea-lion tusks attached to a narrow band of buckskin. They wear with it the closely knit kiseaqōt (Pl. 7, Fig. 2). This is made of twine with a bone needle. It is nearly as close as woven cloth. A row of triangles is painted through the middle, and borders of some small design on the margins. A fringe of feathers forms the lower border. It passes over the head from the forehead and hangs below the waist behind. On the body they wear the double deer-skin robe with the necks joined over the right shoulder. Some of these robes are painted with black and red. The dancers in the line have deer-skins partially stuffed and mounted on poles. Several of the deer-skins are from the white deer (albinos) which have been handed down from father to son, some for many generations. It is not permitted to sell these. They are not considered personal property. On one hand they are entailed, and on the other property of the tribe held in trust by the individual. One man owns a black deer-skin from a deer which he killed not many years ago. Most of the skins employed have some unusual natural markings. They are all decorated at the ears, eyes, and throat with woodpecker crests; and a flap of buckskin, covered with a pileated woodpecker crest and ending in strings of beads, hangs from the mouth.

When the time comes for the afternoon dance the priest builds a fire before the place of dancing. He then prepares the ground where the line is to stand, scattering over it the powdered root of *Leptotænia Californica*. He then takes a seat by the fire facing the line. The men who are to participate have dressed and painted themselves. They then rehearse at one side to be sure the song and all else is right. When they are ready they file into their places and the dance begins. The singer stands in the middle of the line and leads the dance. The rest keep time, stamping with the left foot and swaying the body together with the pole and deer-skin. Two men march toward each other from the opposite ends of the line carrying in their hands the sacred red obsidian knives. They are provided with bone whistles which they blow. After they have marched several times making the turn always toward the line, two others carry black obsidians in the same manner. While the dance is going on the priest sits by the fire, now and then putting in the incense root and making

prayers for the welfare of the people. When one set has completed the dance they withdraw. After quite an interval men from the other division take their places. During these intervals one of the priests*, or some other old man, talks to the people telling them of the good old times, of the old laws, and urging their observance. They are usually listened to with respect. At the last dance of the last day both divisions stand in one long line for the finishing of the ceremony.

The boat dance, which takes place on the fourth day of the ceremony, is spectacular in the extreme. Three large canoes are placed abreast. A man dressed with the hook head-dress assumes a kneeling posture in the bow of each boat. Paddles reaching from bow to bow are held by these men to keep the boats abreast each other. Eight or ten men stand behind one another in each canoe. One man sits in the stern to steer. While the boats are floating down the men flex the knees and hips in unison imparting considerable motion to the boat. The leaders make peculiar motions with their heads while they lead the boat-dance song. This song, either because of its inherent nature, or because of its associations, powerfully affects the old people. At the landing-place opposite Miskût the canoes approach and recede from the shore ten times before the final landing is made.

During the whole dance all visiting people are entertained and feasted. After the final dance on Bald Hill it is said that in olden times the Hupa used to withdraw across the cañon to the ridge on the west and camp for one night that they might consume whatever food was left.

About two weeks after the White Deer-skin Dance, is held the Jumping Dance† (Plate 29), tuñktcitdilya, "fall dance." This dance was last held in 1901, but on that occasion it was not preceded by the White Deer-skin Dance. The dance is celebrated at TakimiLdiñ, near the sweat-house. A high board fence is built back of the dancing line. No one is allowed to stand behind this fence while the dance is in progress. The priest prepares the ground as in the White Deer-skin

* Each division is represented by a priest.

† Hupa Texts xix, xx, and xxi.

Dance by sprinkling powdered incense root, repeating a prayer while doing so. The dancers dress by the sacred sweat-house. For this dance the head-dress, meūnasitan, is a broad band of buckskin on which are sewed many woodpecker scalps. These are placed upright in several rows, making a mass of red. The lower border of the head-dress consists of a narrow stripe of white hair from a deer. There is also a similar stripe above the broad red band, and above that one or two rows made with black hair. The head-dress terminates on both sides in broad flowing ends of buckskin. Feathered darts are placed in the hair behind. Many strings of dentalium shells are worn about the neck. The double deer-skin blanket is girded about the waist, the upper part of the body being naked. The face is usually painted with black paint in horizontal bands. A cylindrical basket, about eighteen inches long and six inches in diameter, is carried in this dance. The ends of this basket are closed, a narrow opening being left the whole length of one side. This side has projecting ends which terminate in bunches of feathers. Four bands of small designs encircle the basket. These baskets hold no sacred object as might be imagined, but straw to better preserve the shape.

When the dancers are dressed and painted they rehearse at the dressing place to be sure everything is right. They then file to their places before the fence where they face the northwest. Some large, well-built man usually has the middle place in the line and leads the dance. A singer stands on each side of him. The ends of the line are occupied by boys. One of the singers commences a song, the leader throws up his plumed head, swings out and up his basket with his right hand and brings down his left foot with a thud. The rest of the line do the same, accompanying the movements by certain vocables. When the first singer has finished his song, another sings. When both songs are done they all drop off their blankets, lay down their baskets, join hands and jump with both feet. This is very vigorous exercise. Occasional rests are taken, the dancers backing to the fence and sitting on their heels. When they have jumped and rested ten times they withdraw. The other division then dresses and dances in the very same manner. Often a keLtsan (virgin)

dances near the end of the line. She is dressed in the beaded buckskin dress. When the men jump she raises herself on her toes, but does not rise from the ground. While they are resting she stands turned to one side looking modestly to the ground. During all the dances the priest sits by a little fire in front of the line, often repeating a prescribed prayer.* During the intervals of the dance he addresses the spectators in a moral and religious strain.

The final dance of the tenth and last day includes both divisions. The southern division dresses about two hundred yards up river from the dancing place and goes through the dance in the regular place before the fence. When the first party is through with the dance they swing around, standing back to the river, facing the fence, and the northern division takes the regular place. Toward the last many others of both divisions come into the dance, finding places on the wings of the lines or standing between them. The four singers are all singing each his own song. Finally the lines begin to move sidewise, still dancing, to their respective dressing places. When they arrive at the dressing places the dance is over for the year.

The older men say dances similar to the spring and fall dance; that is, one in which jumping was a feature, were held at irregular intervals whenever pestilence or some calamity threatened.† The dance was sometimes celebrated on Tsetetmilakût, a mountain near the valley on Supply creek. These dances, while social and religious in character, were really "medicines" in the wide Indian use of the term.

Religious Attitude.

It was not only on these dance occassions that the Hupa's religion manifested itself. Every day and all through the day he maintained a pious frame of mind. When he awoke in the morning he greeted the dawn with a silent prayer that he might see many of them. "For," say the old men, "the dawn is like a person. The dawn says, 'I hope that man will have long life that

* Hupa Texts xx.
† Hupa Texts xiii.

I may see him yet many times.'" It was thought right and wise to be temperate in eating, for the time of scarcity was sure to come. Then the pangs of hunger would not be so great for the one who had practiced depriving himself in time of plenty. Refraining from water when in quest of medicine was done to influence the divinities by self-torture. The old men used frequently to go at night up to a wind-swept point in the coldest weather and stand there naked to make a prayer. Ice sometimes forms in the still water near the shores of the Trinity. The men used to swim a certain course in the icy water and then lie on the frozen shore as long as possible that they might win great good luck.

Not unusual perhaps among primitive people was their reverence for language. More powerful than any herb were the words recited over it before its use. These words are not prayers but accounts of a former cure. The repeating of the words has power to cure again. It is not necessary for the unclean person to go to the ends of the world that he may become pure. It is sufficient that the priest tell how one went. The spirit of the person follows the words of the priest which he does not even comprehend. Equally powerful are evil wishes. To curse a man was a serious offence, because the words themselves had power to harm.

The trails were sacred. "Just the same as people," one old man said. It was wrong to step out of them without some good reason. There were established resting places and places of offering along them where a prayer was made.

It is largely this undercurrent of deep religious feeling that makes the life and deeds of the Indian seem so strange to the white man.

EXPLANATION OF PLATE I.

View of Hupa Valley looking north.

EXPLANATION OF PLATE 2.

Fig. 1.—Konta, the family house.

Fig. 2.—Tnikyfar, sudatory and sleeping room for the men.

Photographs by Dr. W. C. Blasdale.

EXPLANATION OF PLATE 2.

Fig. 1.—Konta, the family house.

Fig. 2.—Taikyfar, sudatory and sleeping room for the men.

Photographs by Dr. W. C. Blasdale.

Explanation of Plate 2.

Fig. 1.—Zonta, the family house.

Fig. 2.—Tukzim, sudatory and sleeping room for the men.

(Photographs by Dr. W. C. Blaudin.)

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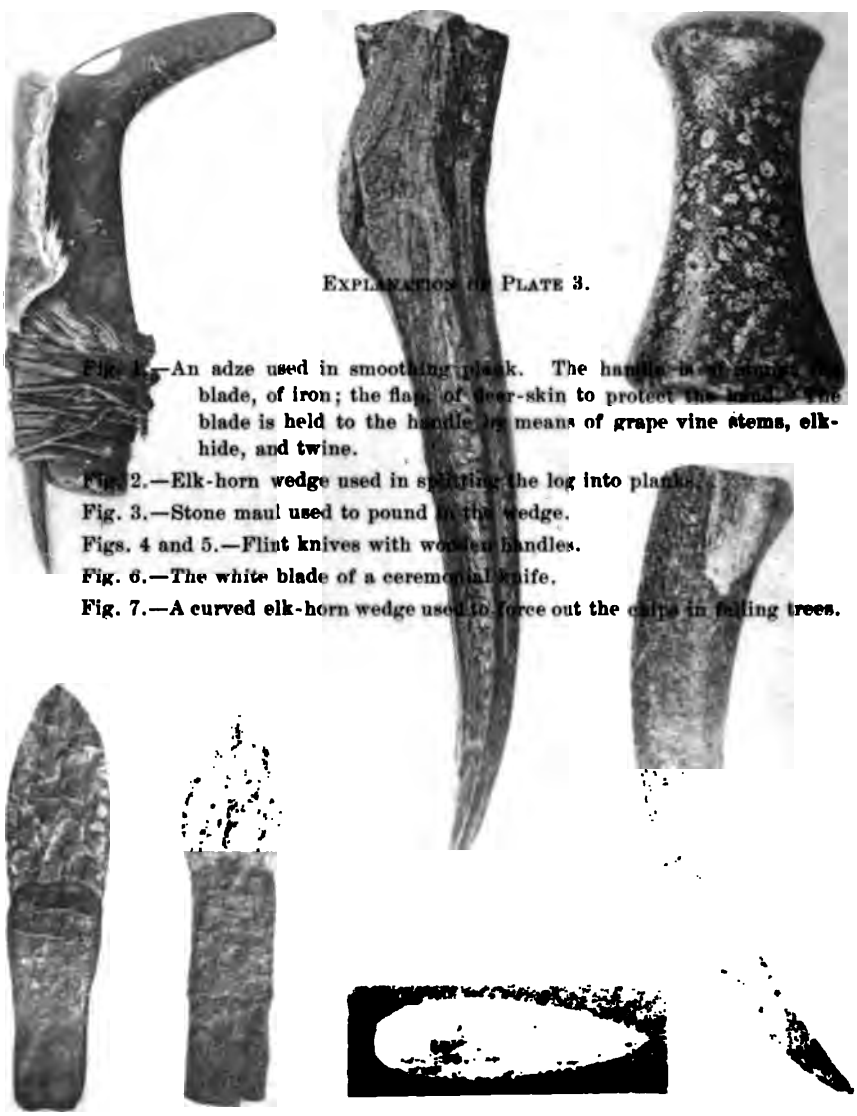
EXPLANATION OF PLATE 4.



EXPLANATION OF PLATE 3.

Fig. 1.—An adze used in smoothing plank. The handle is of antler, the blade, of iron; the flap of deer-skin to protect the hand. The blade is held to the handle by means of grape vine stems, elk-hide, and twine.

Fig. 2.—Elk-horn wedge used in splitting the log into planks.

Fig. 3.—Stone maul used to pound in the wedge.

Figs. 4 and 5.—Flint knives with wooden handles.

Fig. 6.—The white blade of a ceremonial knife.

Fig. 7.—A curved elk-horn wedge used to force out the chips in felling trees.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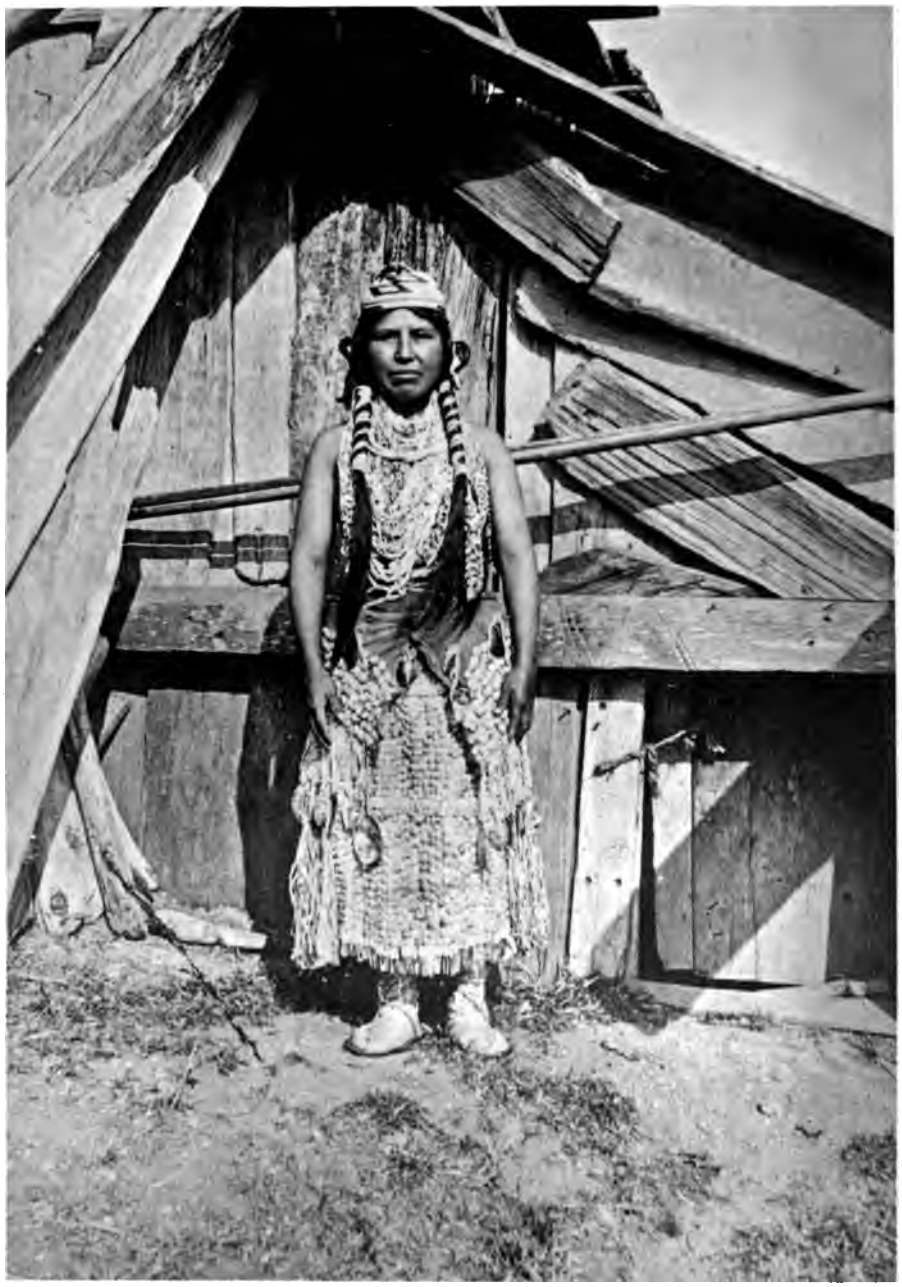

EXPLANATION OF PLATE 4.

Man in gala dress.

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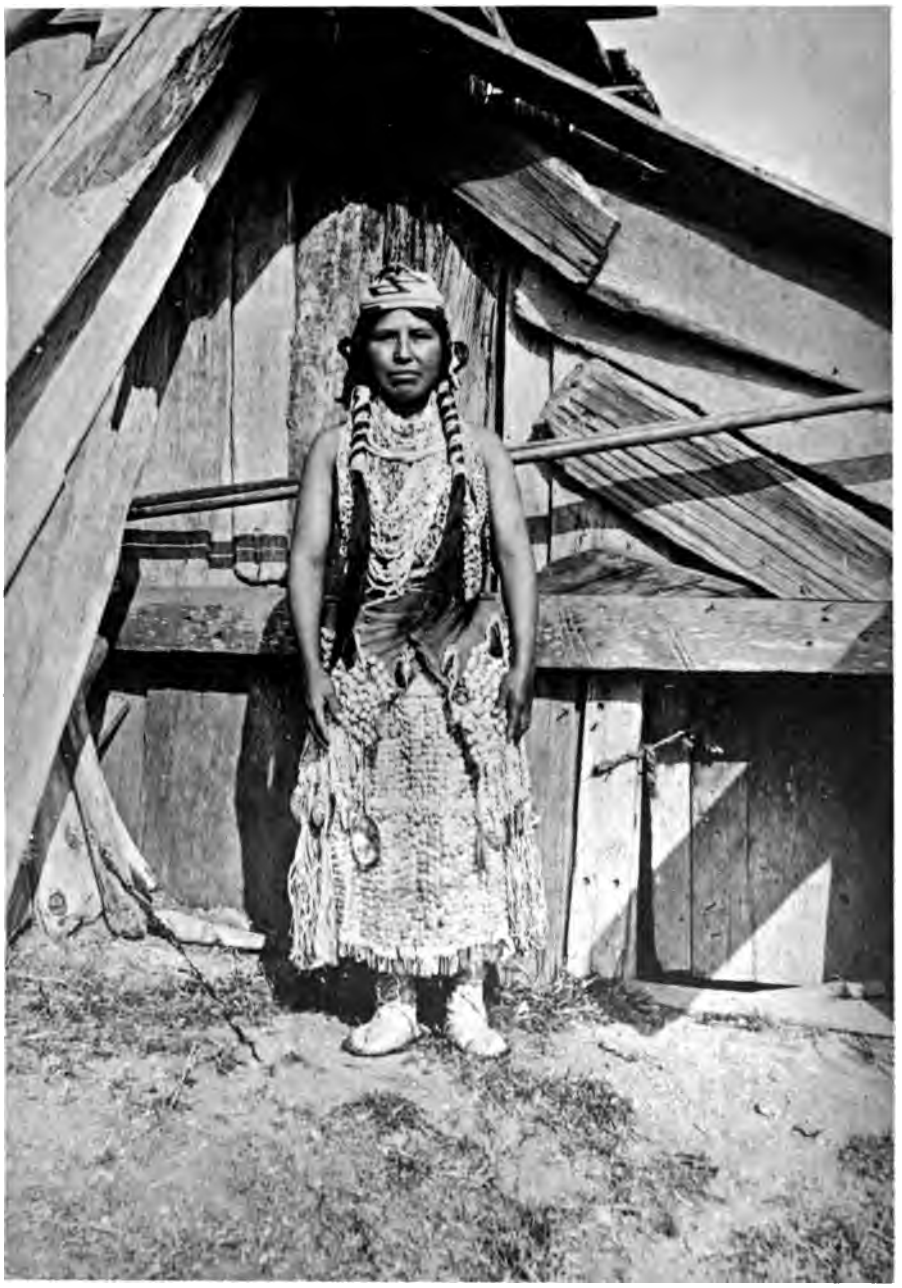

EXPLANATION OF PLATE I

FIG. 1.—Camera lucida drawing of the Wyoming Insectivorous Plant

FIG. 2.—Camera lucida drawing

FIG. 3.—Fig. 1, enlarged two diameters

FIG. 4.—Section of Fig. 3, enlarged two diameters

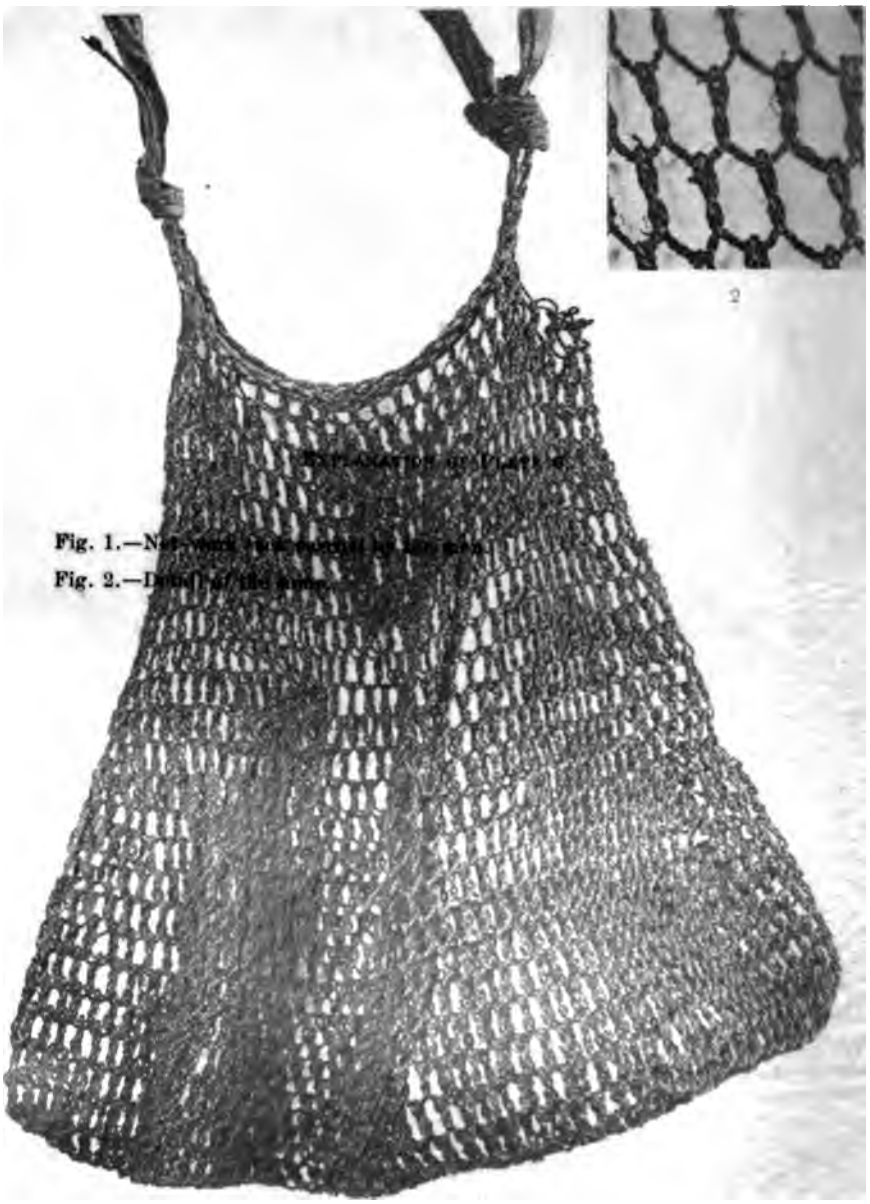

Fig. 1.—

Fig. 2.—

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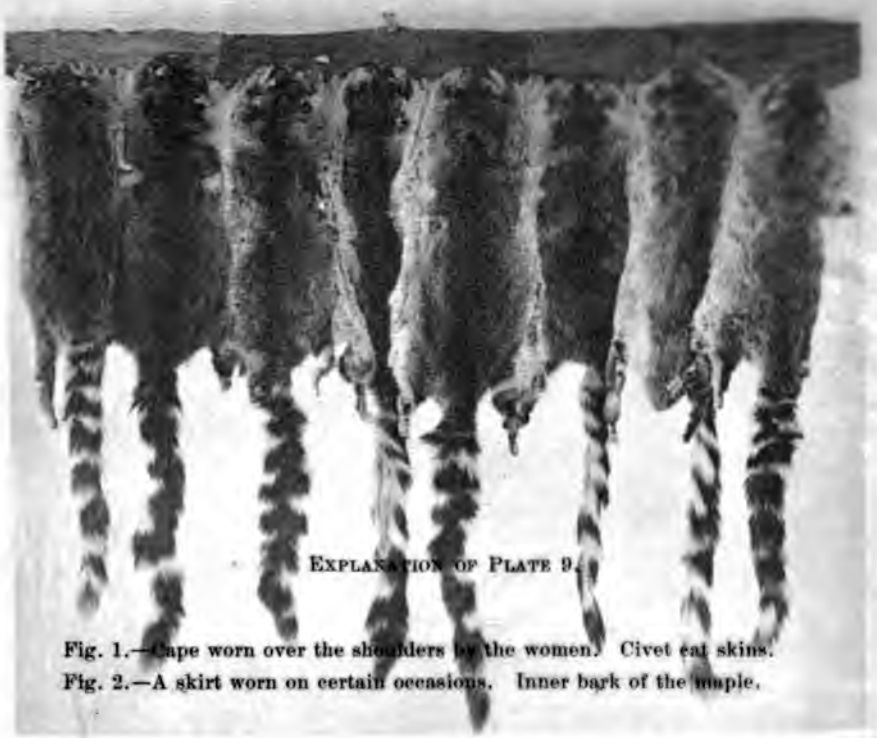
Explanation of Plate 7.

Fig. 1.—Open-work head-dress for the White Deer-skin Dance.

Fig. 2.—Closely made head-dress.

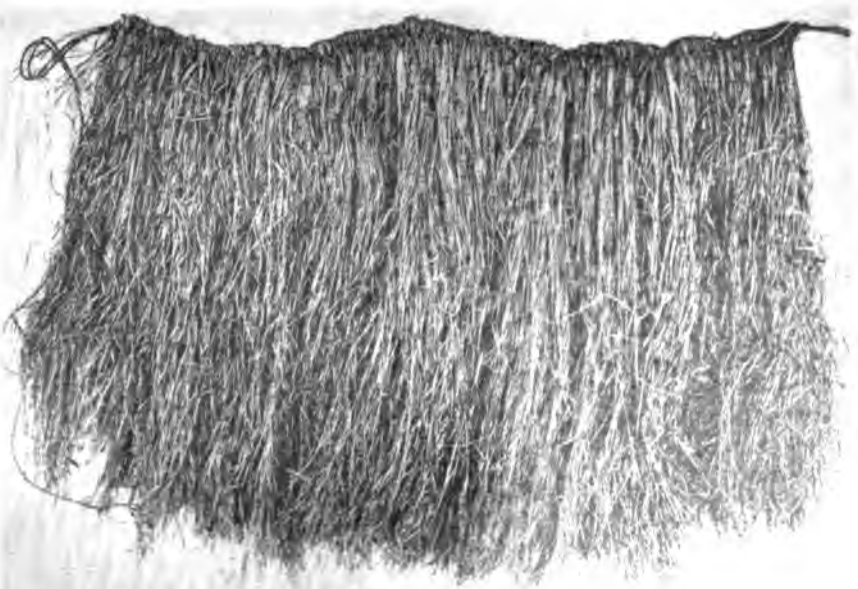
Fig. 3.—Detail of Fig. 1, enlarged two diameters.

Fig. 4.—Detail of Fig. 2, enlarged two diameters.



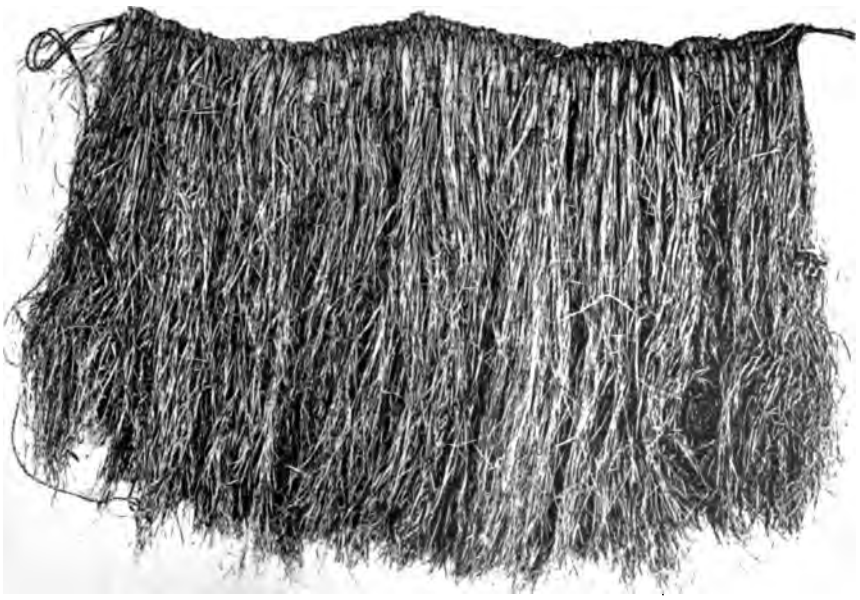
EXPLANATION OF PLATE 9.

Fig. 1.—Cape worn over the shoulders by the women. Civet cat skins.
Fig. 2.—A skirt worn on certain occasions. Inner bark of the maple.



Explanation of Plate 9.

Fig. 1.—Cape worn over the shoulders by the women. Civet cat skins.
Fig. 2.—A skirt worn on certain occasions. Inner bark of the mauple.



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Explanation of Plate 8.

Fig. 1.—A skirt worn around the hips meeting in front.

Fig. 2.—An apron worn in front. Shells of pine nuts are strung on the braided strands.

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Explanation of Plate 10.

Fig. 1.—Ear ornaments worn by women. Dentalia with abalone pendants.

Fig. 2.—Ear ornaments worn by women. Discs of abalone shell.

Fig. 3.—Ear ornaments worn by men. Dentalia with tufts of woodpecker feathers.

Fig. 4.—Bone worn suspended from the neck by girls during adolescence.

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HELIOTYPE CO., BOSTON.

EXPLANATION OF PLATE 9.

Fig. 1.—Cape worn over the shoulders by the women. (Civet cat skins.

Fig. 2.—A skirt worn on certain occasions. Inner bark of the maple.

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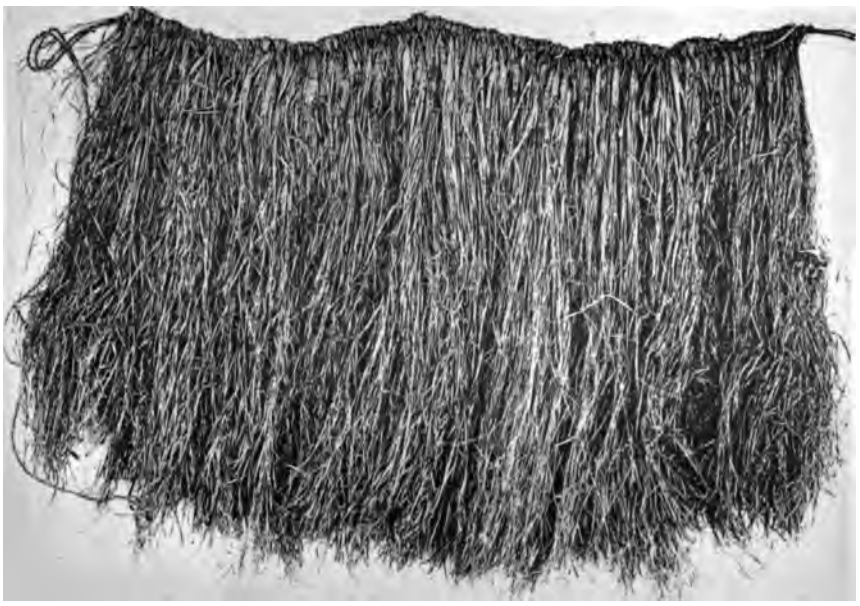

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HELIOTYPE CO., BOSTON.

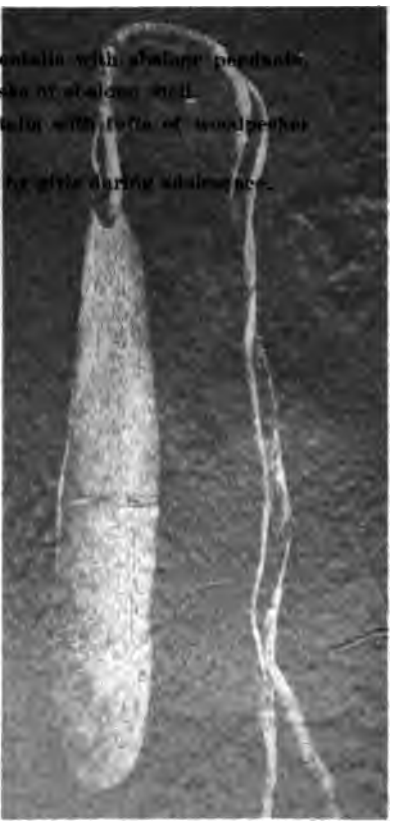
EXPLANATION OF PLATE 10.

Fig. 1.—Ear ornaments worn by women. Dentalia with abalone pendants.

Fig. 2.—Ear ornaments worn by women. Discs of abalone shell.

Fig. 3.—Ear ornaments worn by men. Dentalia with tufts of woodpecker feathers.

Fig. 4.—Bone worn suspended from the neck by girls during adolescence.



Explanation of Plate II.

Fig. 1.—Sinew-backed bow of unusual length.
Fig. 2.—Decorated bow with wide limbs.
Fig. 3.—Bow of the ordinary size.
Fig. 4.—Arrow with flint point.
Fig. 5.—Arrow with foreshaft of hard wood.
Fig. 6.—Boy's arrow with two feathers and simple shaft.

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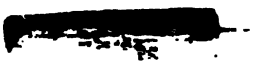

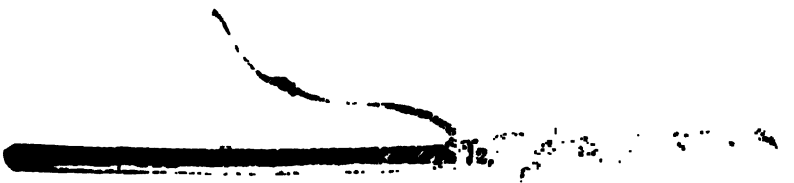

Fig. 1.—Man making a flint arrow-head.

Fig. 2.—Arrow-point attached.

Fig. 3.—Flaking instrument.

Fig. 4.—Implement used in finishing the edge and in making the notches.

Explanation of Plate II.

Fig. 1.—Sinew-backed bow of unusual length.

Fig. 2.—Decorated bow with wide limbs.

Fig. 3.—Bow of the ordinary size.

Fig. 4.—Arrow with flint point.

Fig. 5.—Arrow with foreshaft of hard wood.

Fig. 6.—Boy's arrow with two feathers and simple shaft.

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EXPLANATION OF PLATE 13.

hooks used in catching trout.

achable points of fish-spear.

h-spear.

Explanation of Plate 12.

Fig. 1.—Man making a flint arrow-head.

Fig. 2.—Arrow-point attached.

Fig. 3.—Flaking instrument.

Fig. 4. Implement used in finishing the edge and in making the notches.

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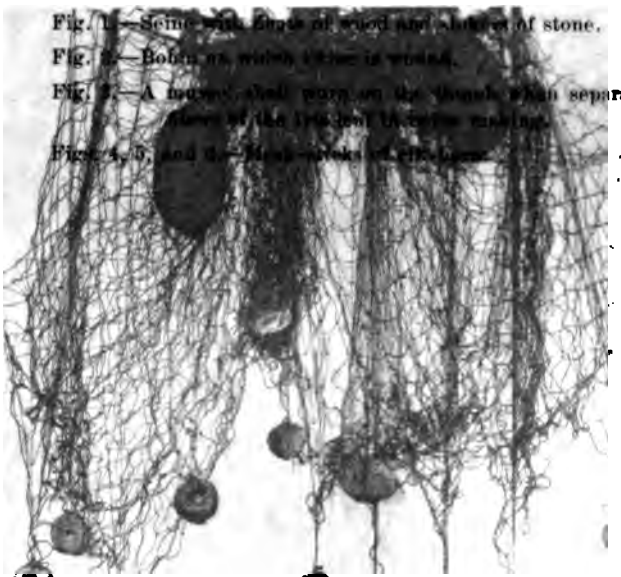
EXPLANAT

Fig. 1.—Seine with floats of wood and sinkers of stone.

Fig. 2.—Bolas or, which stone is wound.

Fig. 3.—A mussel shell worn on the thumb when separating the mar
sinews of the ten and in netting.

Figs. 4, 5, and 6.—Mesh-sticks of different sizes.



EXPLANATION OF PLATE 14.

Fig. 1.—Skein with floats of wood and sinkers of stone.

Fig. 2.—Bobin on which twine is wound.

Fig. 3.—A mussel shell worn on the thumb when separating the marginal fibers of the Iris leaf in twine making.

Figs. 4, 5, and 6.—Mesh-sticks of elk-horn.

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HELIOTYPE CO., BOSTON.

EXPLANATION OF PLATE 13

Fig. 1.—Woman cooking acorn meal on the river shore.

Fig. 2.—Woman washing the meal from the under surface of the acorn meal after the leaching is completed.

EXPLANATION OF PLATE 15.

Fig. 1.—*Woman* working acorn meal on the river shore.

Fig. 2.—*Woman* washing the sand from the under surface of the acorn meal after the leaching is completed.

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HELIOTYPE CO., BOSTON.

EXPLANATION OF PLATE 16.

Fig. 1.—Wooden bowl passed for the washing of hands after partaking of venison.

Fig. 2.—Tray of Redwood on which venison is served.

Figs. 3 and 7.—Back view of elk-horn spoons.

Figs. 4 and 5.—Elk-horn spoons.

Fig. 6.—Mussel shell used by the women in eating acorn soup.

Fig. 8.—Elk-horn spoon in the process of making.

Explanation of Plate 16.

Fig. 1.—Wooden bowl passed for the washing of hands after partaking of venison.

Fig. 2.—Tray of Redwood on which venison is served.

Figs. 3 and 7.—Back view of elk-horn spoons.

Figs. 4 and 5.—Elk-horn spoons.

Fig. 6.—Mussel shell used by the women in eating acorn soup.

Fig. 8.—Elk-horn spoon in the process of making.

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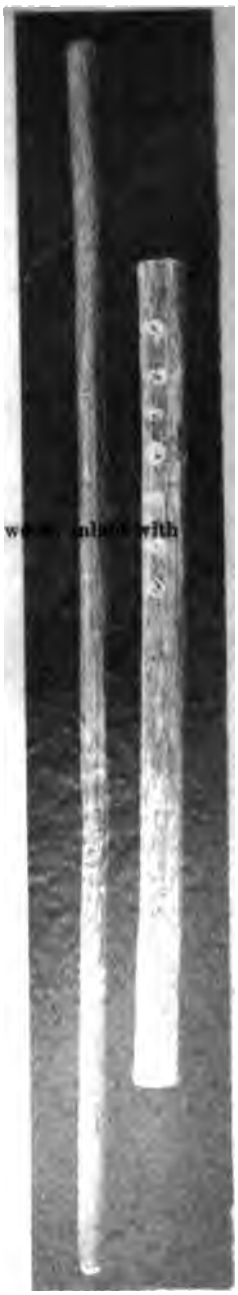

EXPLANATION OF PLATE [illegible].

Fig. 1.—Pipe in a sack of buckskin.

Fig. 2.—Pipe with a bowl of stone and stem of [illegible]nzanita wood, inlaid with mother-of-pearl.

Fig. 3.—Pipe with bowl of stone and stem of w[illegible]

Fig. [illegible]—Pipe made entirely of stone.

[illegible]—Bowl of stone detached.

[illegible]—Shaman's pipe.

Fig. 7.—Fire sticks from the root of the cotton[illegible].

Explanation of Plate 17.

Fig. 1.—Pipe in a sack of buckskin.

Fig. 2.—Pipe with a bowl of stone and stem of manzanita wood, inlaid with mother-of-pearl.

Fig. 3.—Pipe with bowl of stone and stem of wood.

Fig. 4.—Pipe made entirely of stone.

Fig. 5.—Bowl of stone drilled.

Fig. 6.—Shaman's pipe.

Fig. 7.—Five sticks from the root of the cottonwood.

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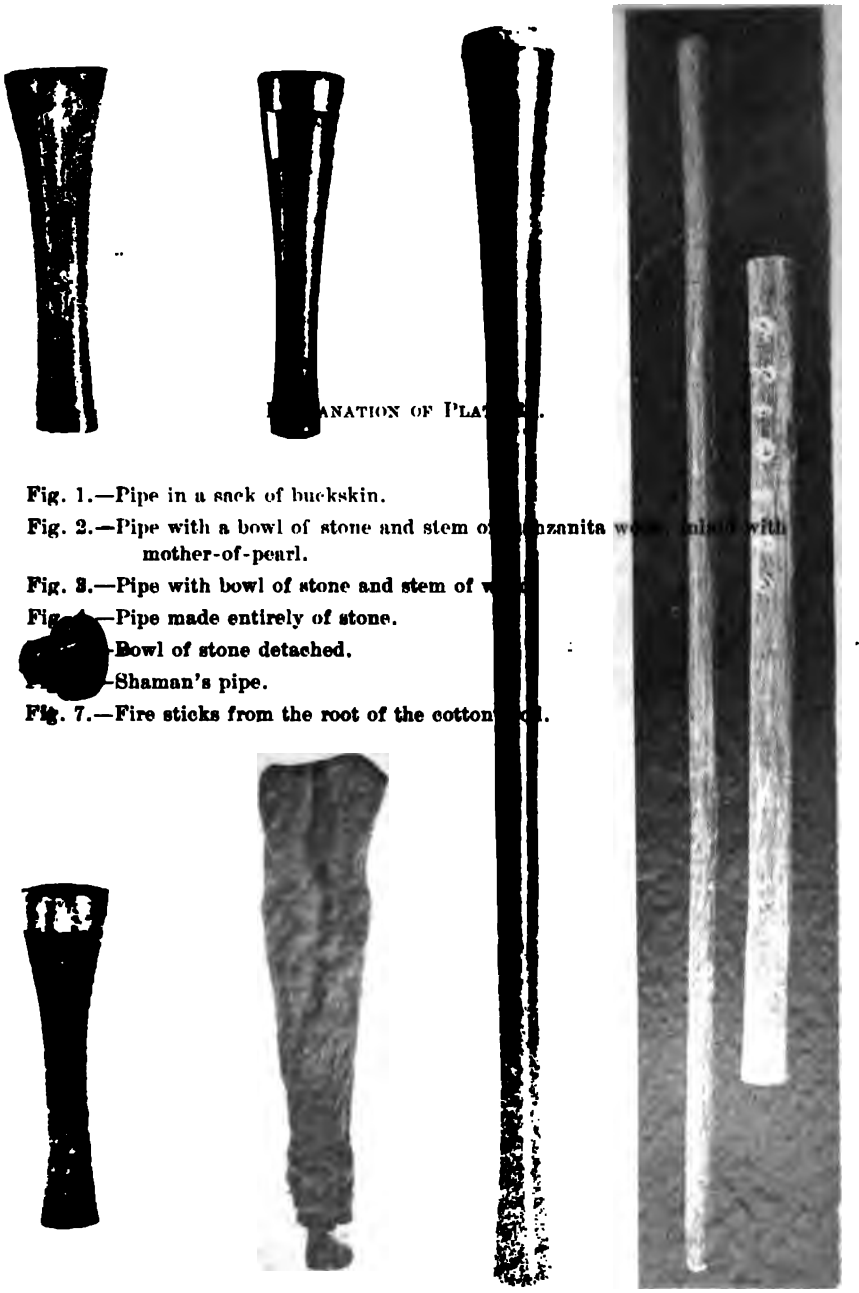

EXPLANATION OF PLATE [illegible].

Fig. 1.—Pipe in a sack of buckskin.

Fig. 2.—Pipe with a bowl of stone and stem of [illegible]anzanita wood, inlaid with mother-of-pearl.

Fig. 3.—Pipe with bowl of stone and stem of [illegible].

Fig. [illegible].—Pipe made entirely of stone.

[illegible].—Bowl of stone detached.

[illegible].—Shaman's pipe.

Fig. 7.—Fire sticks from the root of the cotton[illegible].

Explanation of Plate IV.

Fig. 1.—Pipe in a sack of buckskin.

Fig. 2.—Pipe with a bowl of stone and stem of muuxanita wood, inlaid with mother-of-pearl.

Fig. 3.—Pipe with bowl of stone and stem of wood.

Fig. 4.—Pipe made entirely of stone.

Fig. 5.—Bowl of stone detached.

Fig. 6.—Shaman's pipe.

Fig. 7.—Pipe sticks from the root of the cottonwood.


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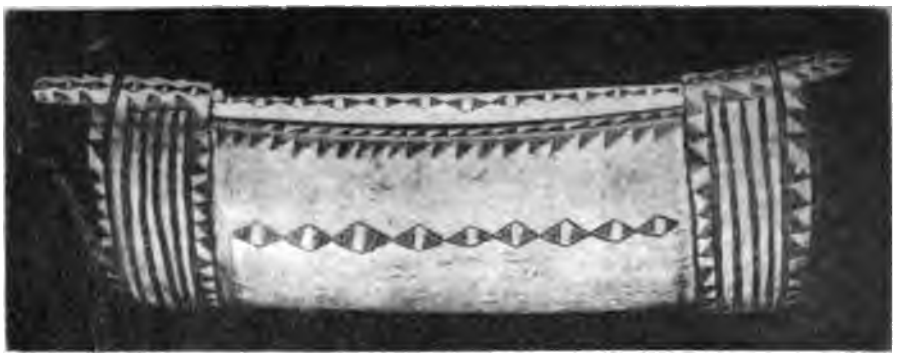
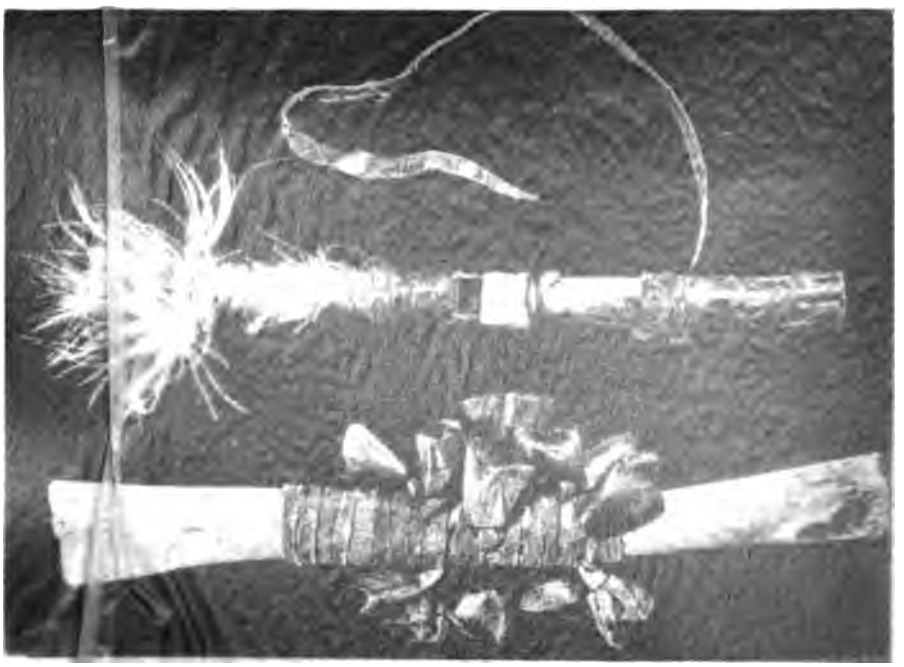


Fig. —Medicine rattle of deer's hoofs.
Fig. —Whistle of crane's leg.



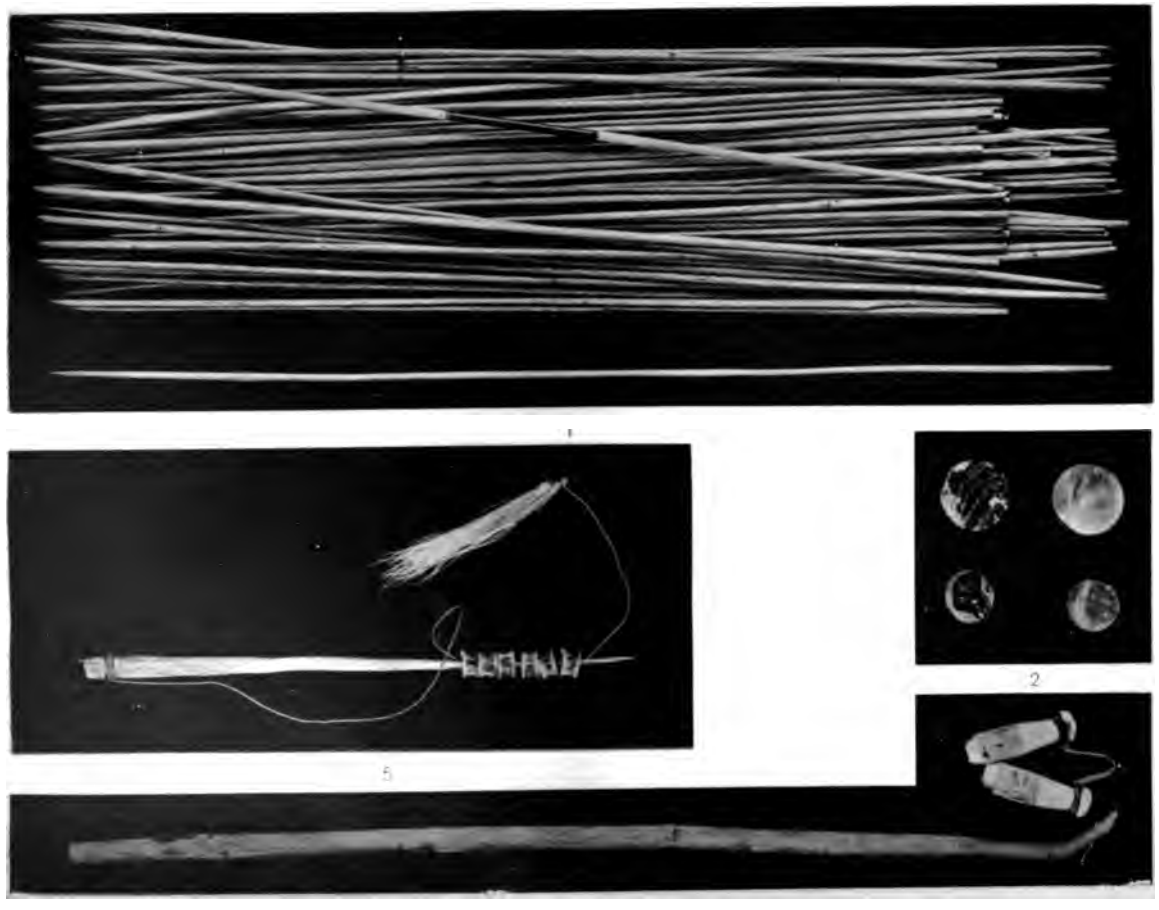
EXPLANATION OF PLATE IX.

Fig. 1.—Money box of elk-horn.

Fig. 2.—Pentalin decorated and strung for use as money.

Fig. 3.—Medicine rattle of deer's hoofs.

Fig. 4.—Whistle of crane's leg.



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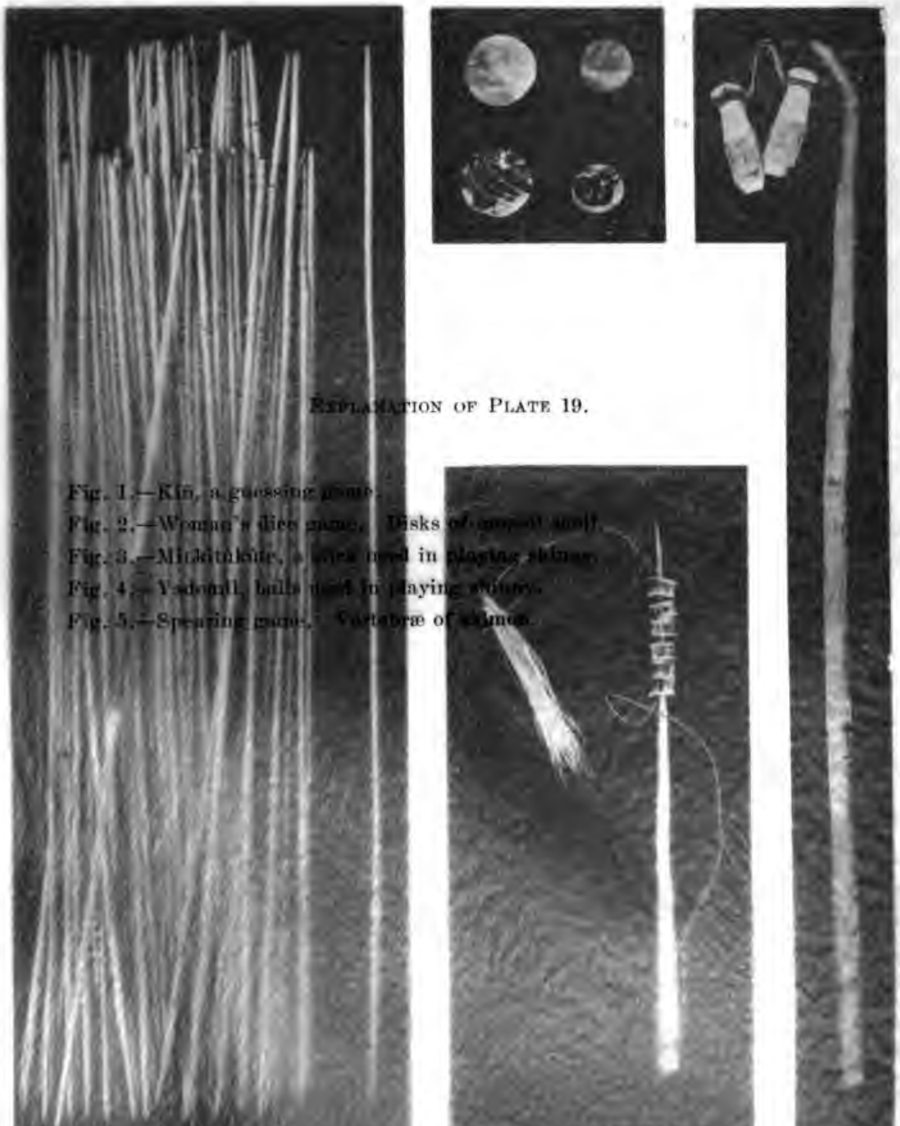


EXPLANATION OF PLATE 19.

Fig. 1.—Kin, a guessing game.

Fig. 2.—Woman's dice game. Disks of mussel shell.

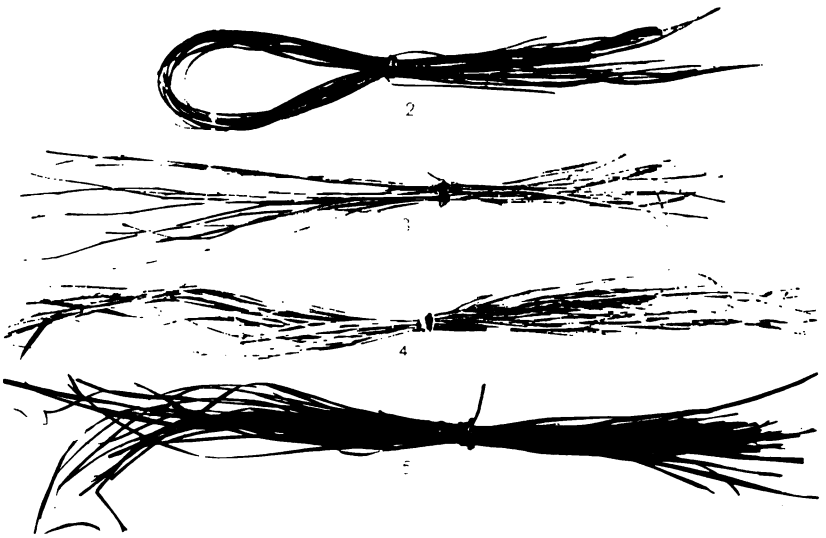
Fig. 3.—Mickitahkute, a stick used in playing shinny.

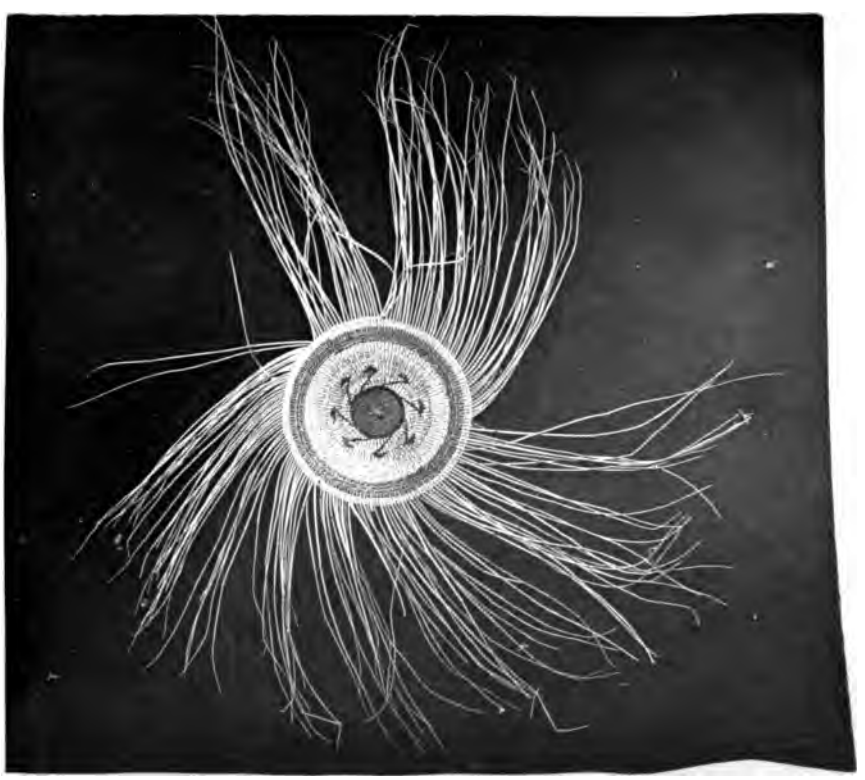
Fig. 4.—Yadonil, balls used in playing shinny.

Fig. 5.—Spearing game. Vertebræ of salmon.

Explanation of Plate 19.

Fig. 1.—Kili, a running game.
Fig. 2.—Woman's dice game. Disks of mussel shell.
Fig. 3.—Mirkittikite, a stick used in playing shinny.
Fig. 4.—Yadeuil, balls used in playing shinny.
Fig. 5.—Spearing game. Vertebræ of salmon.





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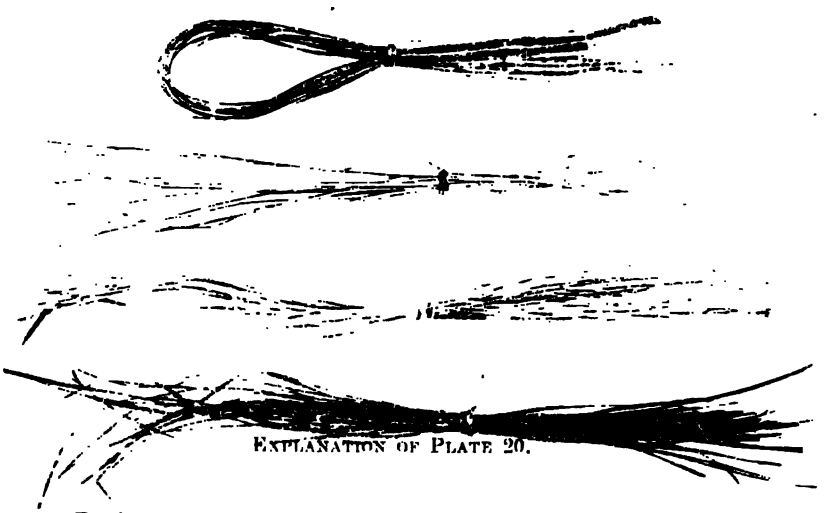


EXPLANATION OF PLATE 20.

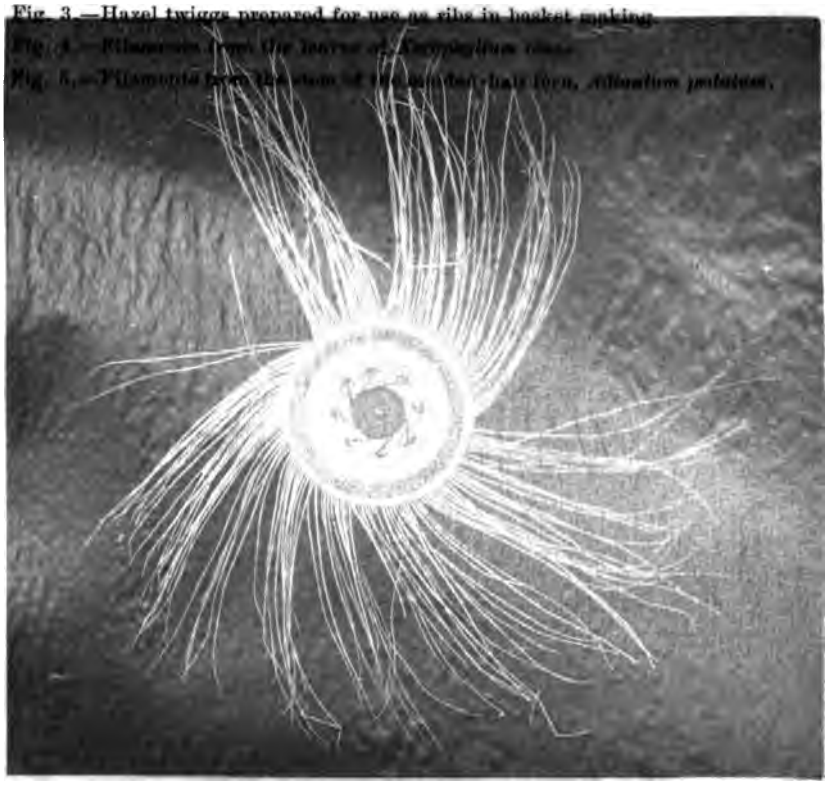
Fig. 1.—Uncompleted basket.

Fig. 2.—Filaments split from the root of a conifer.

Fig. 3.—Hazel twigs prepared for use as ribs in basket making.

Fig. 4.—Filaments from the leaves of *Xerophyllum asaa*.

Fig. 5.—Filaments from the stem of the maiden-hair fern, *Adiantum pedatum*.



Explanation of Plate 20.

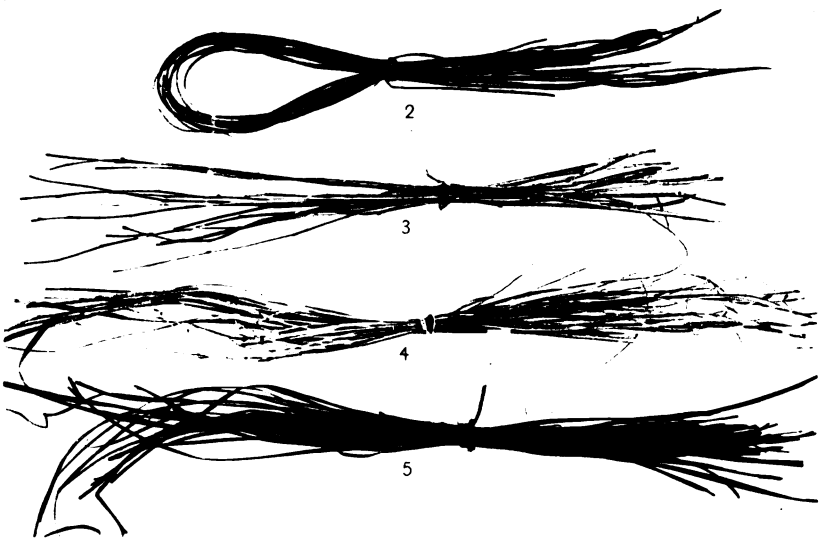
Fig. 1.—Uncompleted basket.

Fig. 2.—Filaments split from the root of a conifer.

Fig. 3.—Hazel twigs prepared for use as ribs in basket making.

Fig. 4.—Filaments from the leaves of *Xerophyllum tenax*.

Fig. 5.—Filaments from the stem of the maiden-hair fern, *Adiantum pedatum*.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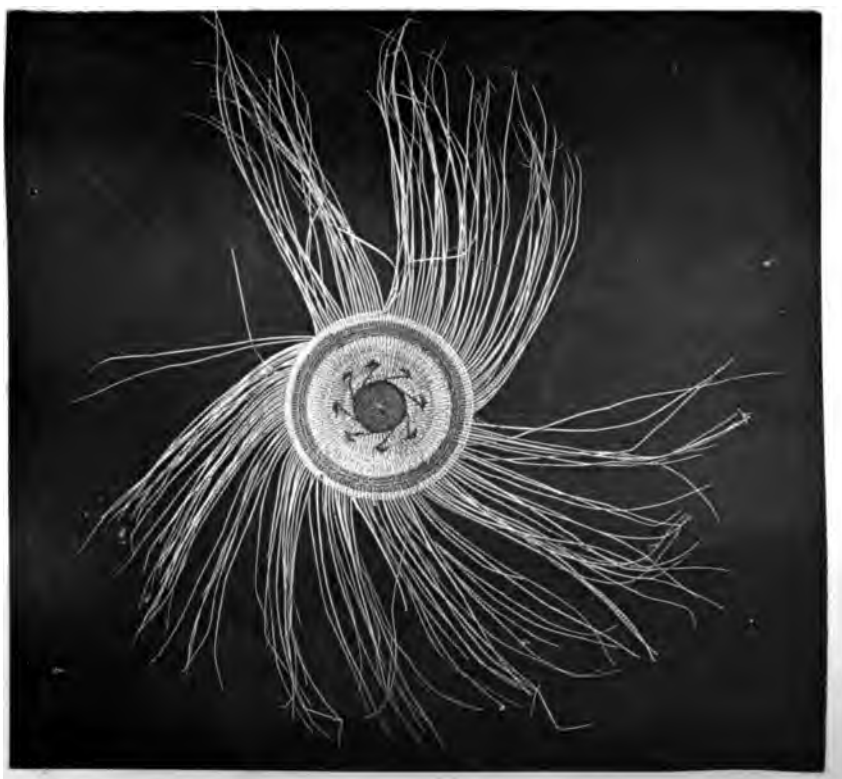
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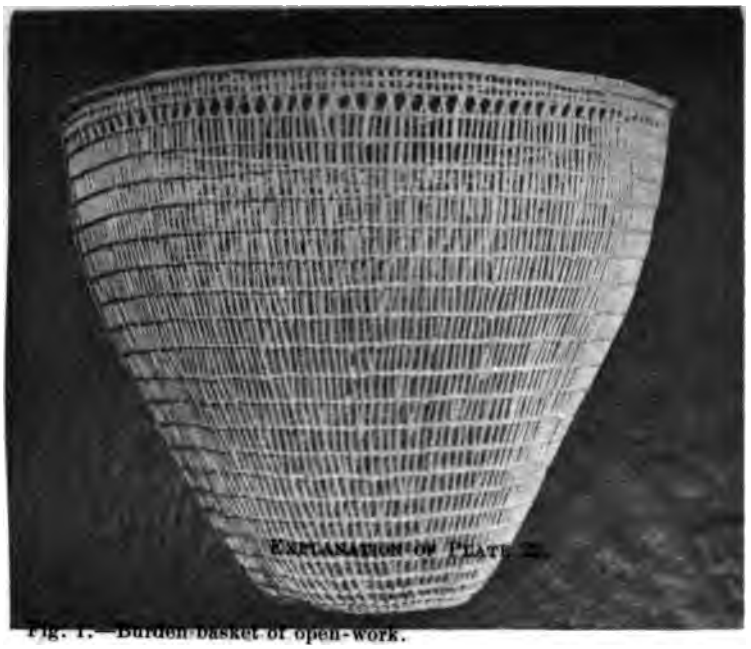
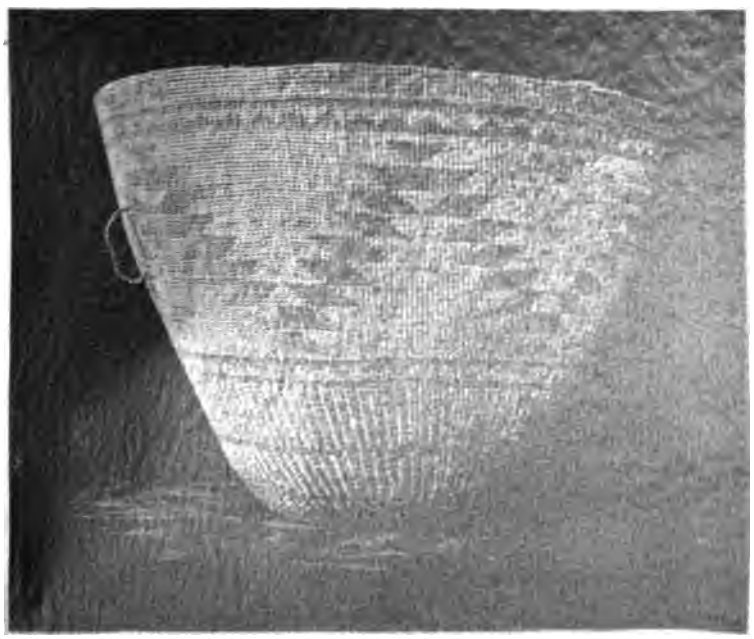


Fig. 1.—Burden basket of open-work.

Fig. 2.—Burden basket closely twined for gathering small seeds.



Explanation of Plate 21.

Fig. 1.—Basket-cradle in which infants are kept.

Fig. 2.—Basket-plate on which salmon are served.

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EXPLANATION OF PLATE 23.

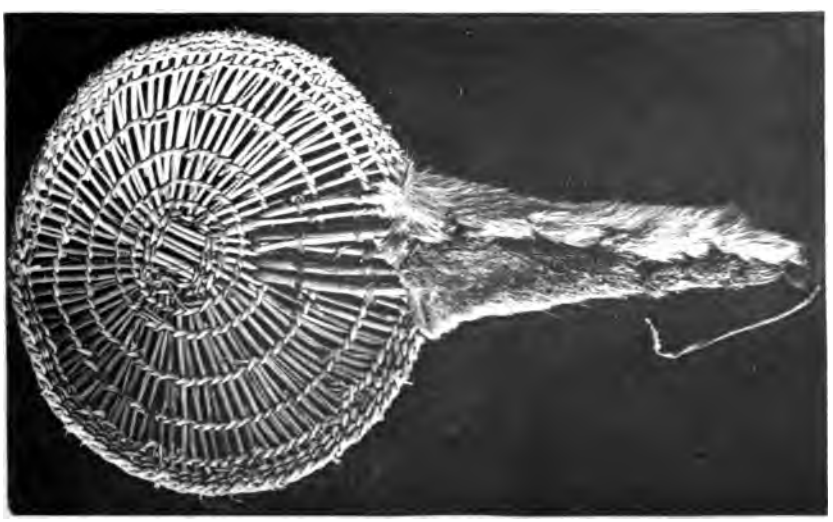
FIG. 1.—Storage basket of the largest size.

FIG. 2.—Instrument used in beating off the seeds of plants.

Explanation of Plate 22.

Fig. 1.—Burden-basket of open-work.

Fig. 2.—Burden basket closely twined for gathering small seeds.



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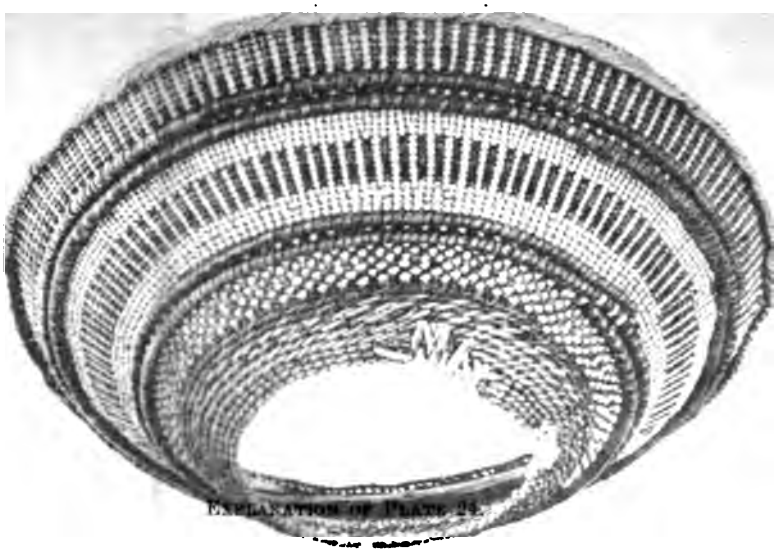


EXPLANATION OF PLATE 24.

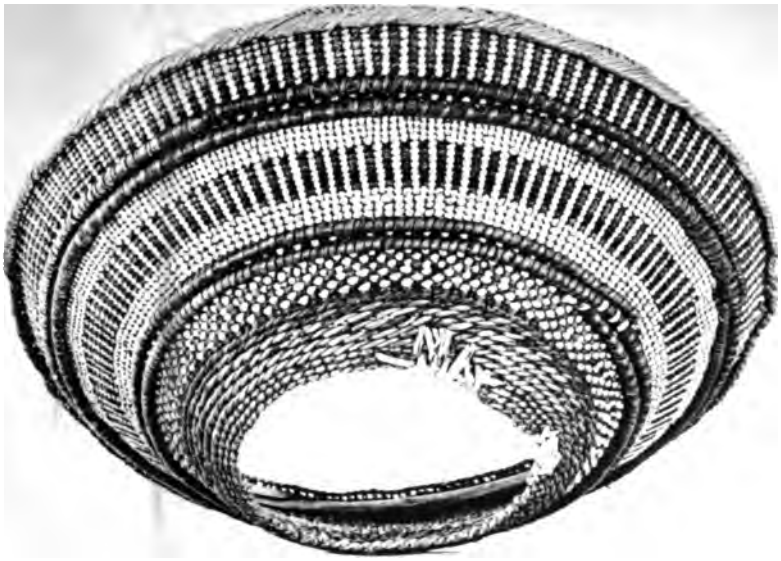
Fig. 1.—Basket-mill used in grinding acorns.

Fig. 2.—Basket-pan used to receive the acorn meal as it is sifted.

Explanation of Plate 23.

Fig. 1.—Storage basket of the largest size.

Fig. 2.—Instrument used in beating off the seeds of plants.



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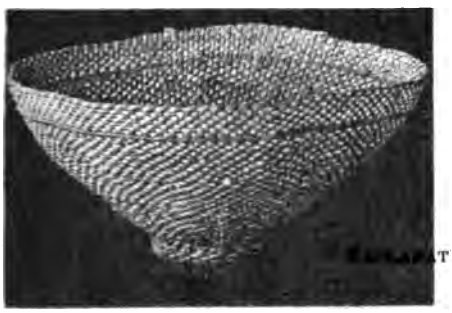


Fig. 1.- Basket used in separating the fine from the coarse acorn meal.

Fig. 2. Basket-cup used to dip up water.

Fig. 3.—Basket-bowl in which acorn mush is served. Design, wood mila, "pig's head."

Fig. 4.—Basket-cup, worn by the women. Design, testeetemikye, "swallow's tail."

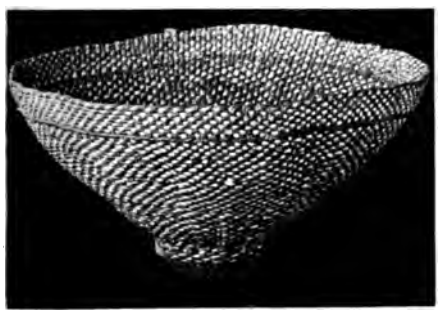
Fig. 5.—Basket-cup. Design, pilikútdasmay, "one rest on the other."

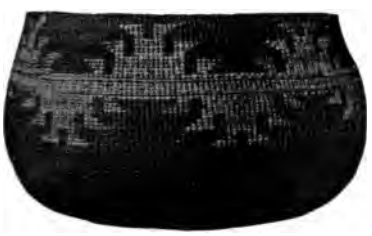
Fig. 6.—Basket-cup. Design, testeetemikye, "swallow's tail."

EXPLANATION OF PLATE 24.

Fig. 1.—Basket-mill used in grinding acorns.

Fig. 2.—Basket-pan used to receive the acorn meal as it is sifted.





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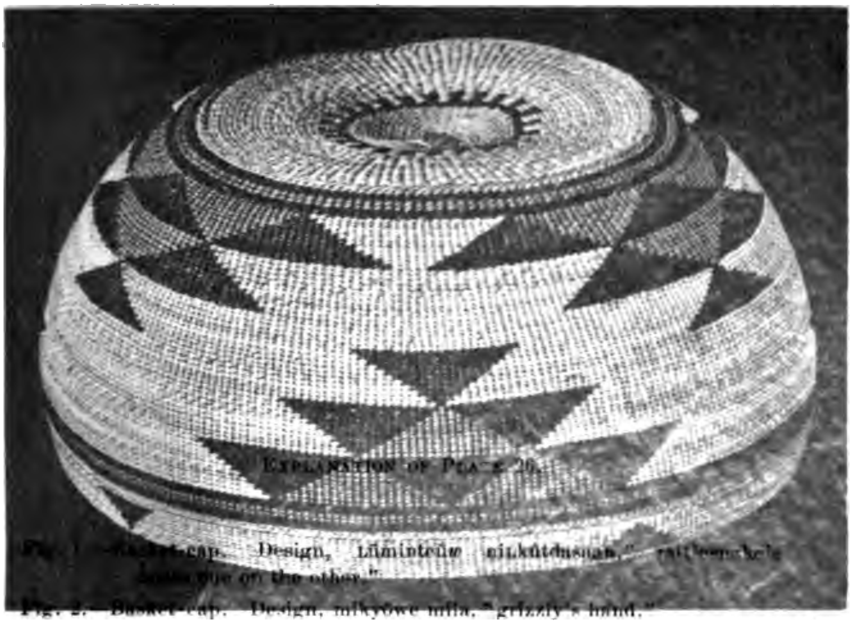


Explanation of Plate 25.

Fig. 1.—Basket used in separating the flne from the coarse sorgo meal.

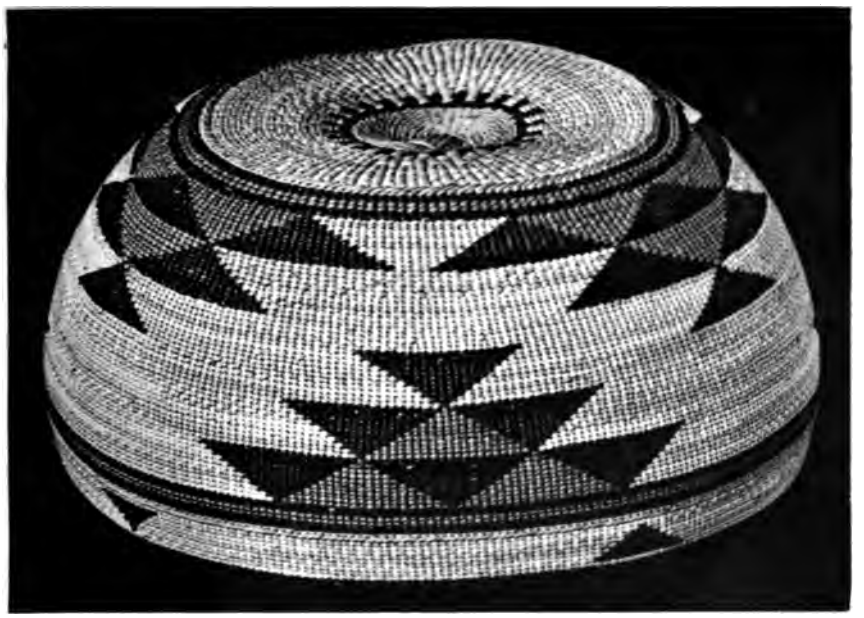
Fig. 2.—Basket-cup used to dip up water.

Fig. 3.—Basket-bowl in which sorgo mush is served. Denkyn, towai mila, "frog's hand."

Fig. 4.—Basket-cap, worn by the women. Denkyn, tsetsetsemikye, "swallow's tail."

Fig. 5.—Basket-cap. Denkyn, nikkitdunnan, "one rest on the other."

Fig. 6.—Basket-cap. Denkyn, tsetsetsemikye, "swallow's tail."



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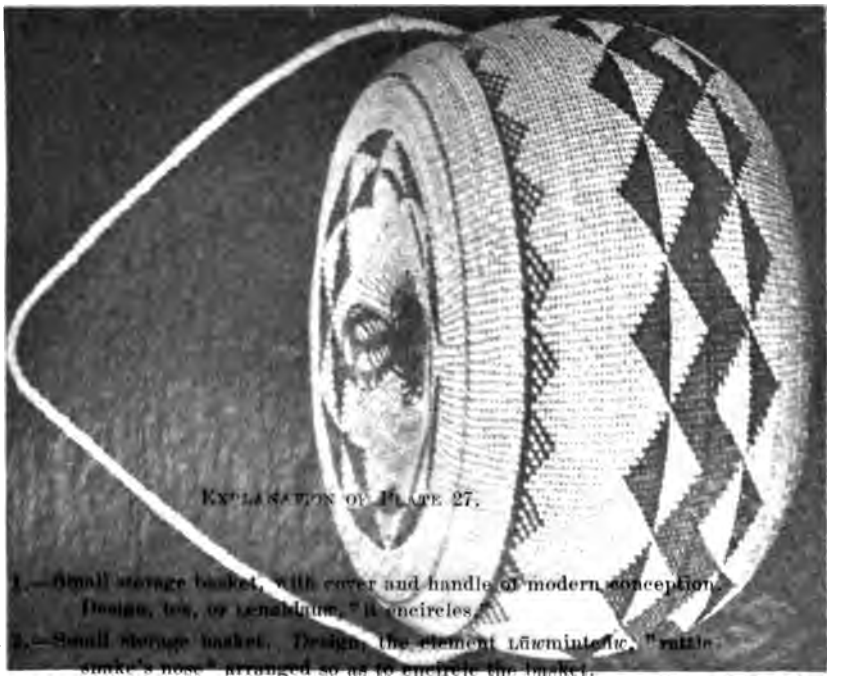
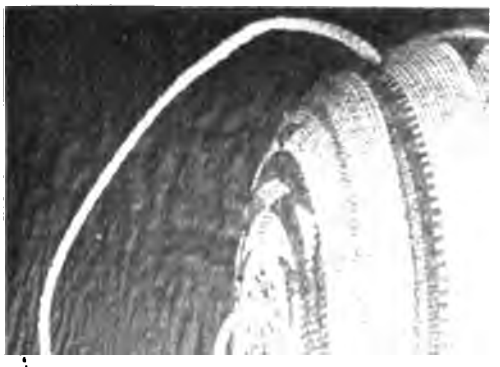


EXPLANATION OF PLATE 27.

Fig. 1.—Small storage basket, with cover and handle of modern conception. Design, tea, or tcnabinum," it encircles.

Fig. 2.—Small storage basket. Design, the element tăemintcnic, "rattlesnake's nose" arranged so as to encircle the basket.



EXPLANATION OF PLATE 26.

Fig. 1.—Basket-cap. Denizen, Adminteûw nikkûdaaaan," rattlesnake's nose one on the other."

Fig. 2.—Basket-cap. Denizen, mikzôwe mîin, "prairie's hand."

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HELIOTYPE CO., BOSTON.

EXPLANATION OF PLATE 27.

Fig. 1.—Small storage basket, with cover and handle of modern conception. Design, tea, or rendaban, "it empties."

Fig. 2.—Small storage basket. Design, the element kumunteur, "rattle-snake's nose" attached so as to empty the basket.

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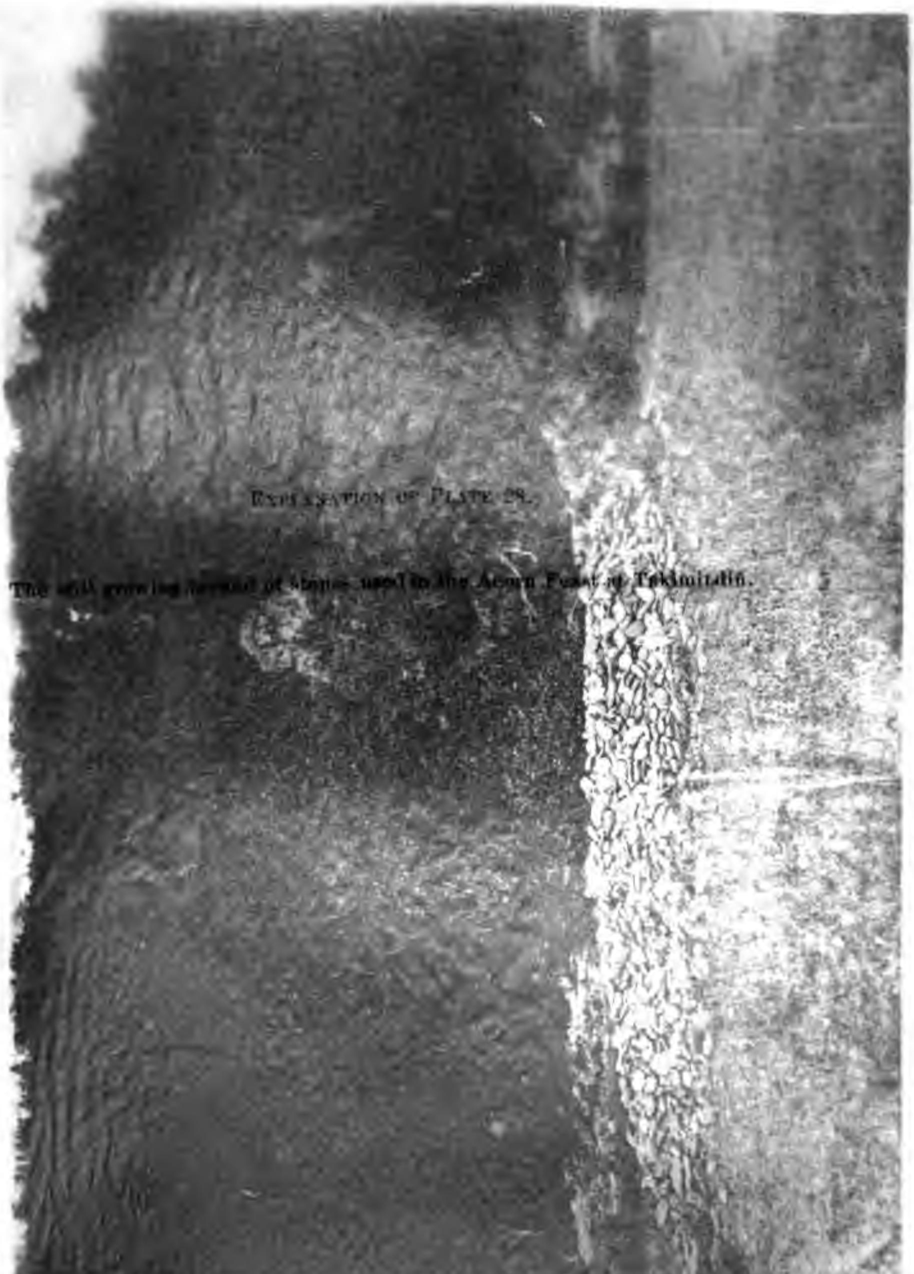
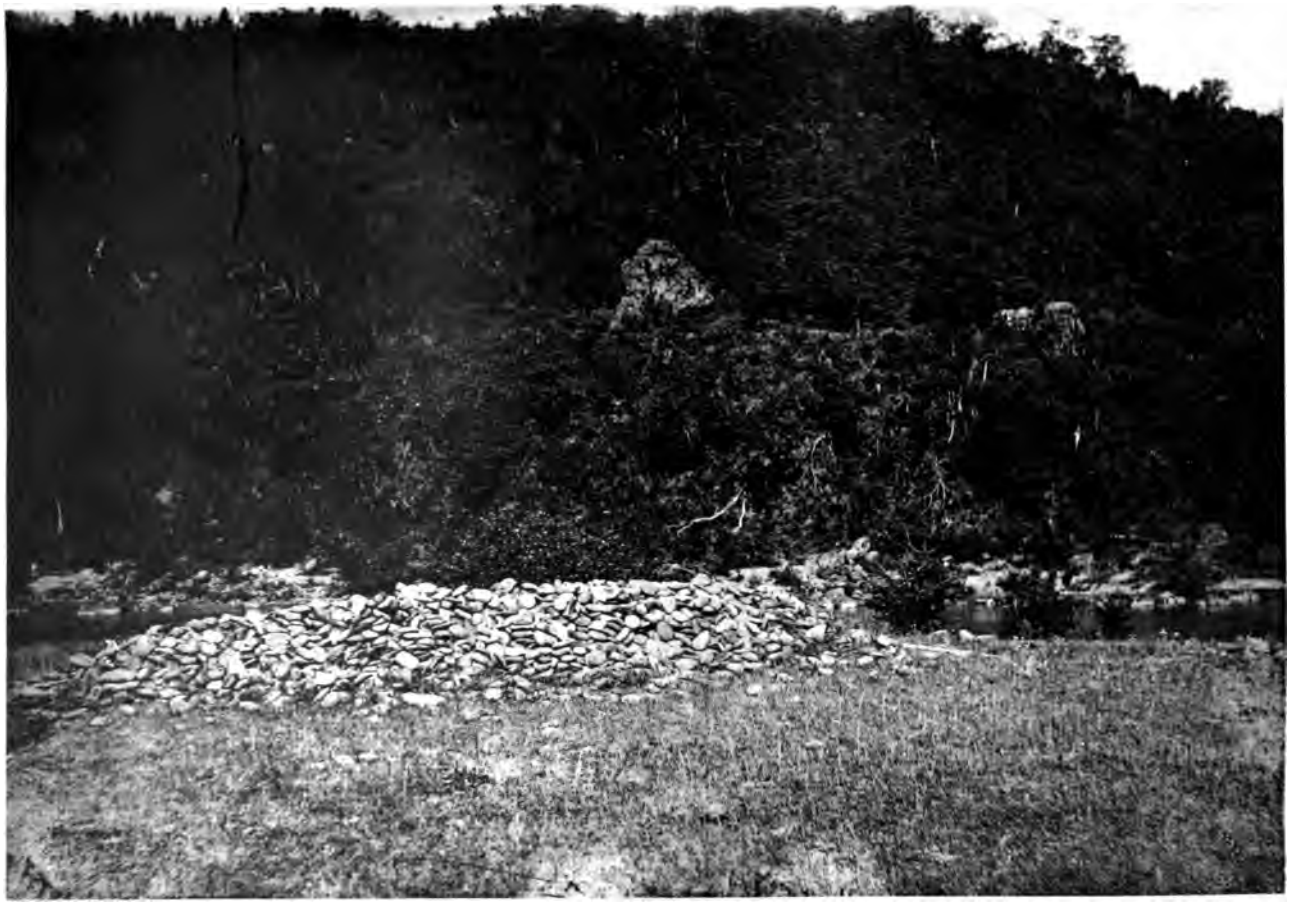


EXPLANATION OF PLATE 28.

The still growing mound of stones used in the Acorn Feast at Takimitdin.

EXPLANATION OF PLATE 25.

The mill growing mound of stones used in the Acorn Pond at Tahanto.



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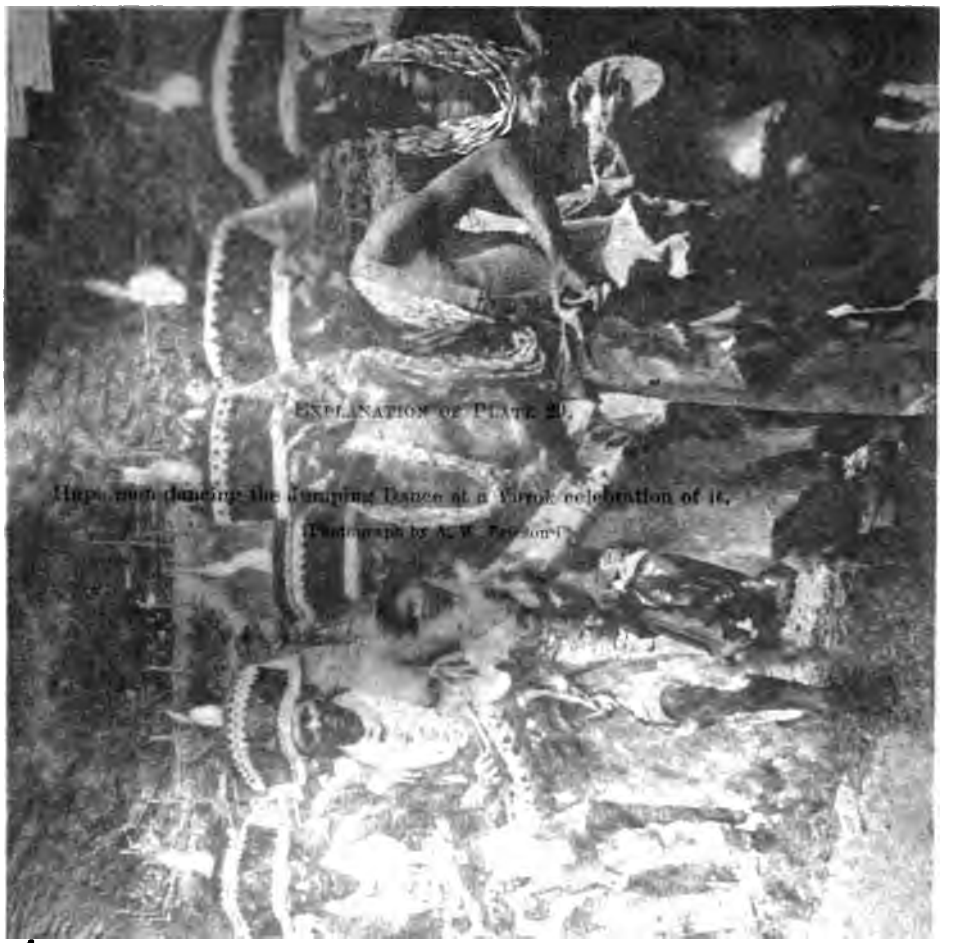

EXPLANATION OF PLATE 21.

Hupa men dancing the Jumping Dance at a recent celebration of it.

[Photograph by A. W. Ferrier.]

EXPLANATION OF PLATE 20.

Hupa men dancing the Jumping Dance at a Yurok celebration of it.

(Photograph by A. W. Ericson.)

Explanation of Plate 30.

The White Deer-skin Dance at Nittůk'alai Hupa Valley.

(Photograph by A. W. Ericson.)

EXPLANATION OF PLATE 30.

The White Deer-skin Dance at Nitinkani Hopa Valley.

(Photograph by A. W. Erikson.)

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